

FCC  
RF  
TEST REPORT

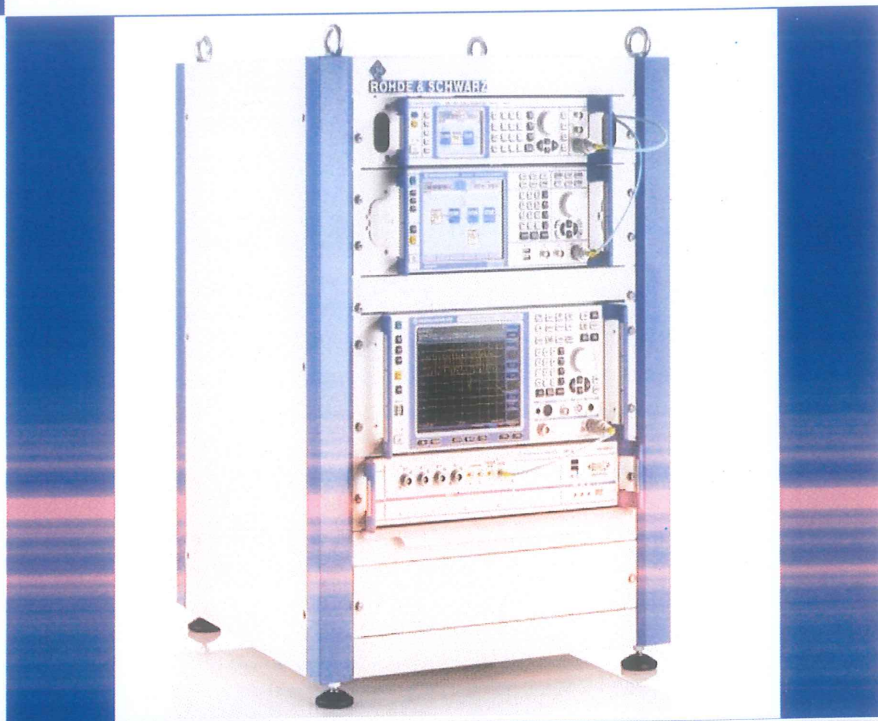
ISSUED BY  
Shenzhen BALUN Technology Co., Ltd.



FOR  
OTT STB V3

ISSUED TO  
SHENZHEN COSHIP ELECTRONICS CO., LTD.

A6 Floor, Rainbow Building, 5th Zone, North, Hi-tech Industrial Park,  
Nanshan District, Shenzhen, China



Prepared by: Zheng Muyi

Zheng Muyi

(Engineer)

Date May 19, 2017

Approved by: Wei Yanquan

Wei Yanquan

(Chief Engineer)

Date May 19, 2017

Report No.: BL-SZ1740210-602

EUT Name: OTT STB V3

Model Name: N9090

Brand Name: COSHIP

Test Standard: 47 CFR Part 15 Subpart E

FCC ID: 2AL2ON9090

Test conclusion: Pass

Test Date: Apr. 21, 2017 ~ May 05, 2017

Date of Issue: May 19, 2017

NOTE: This test report can be duplicated completely for the legal use with the approval of the applicant; it shall not be reproduced except in full, without the written approval of Shenzhen BALUN Technology Co., Ltd. BALUN Laboratory. Any objections should be raised within thirty days from the date of issue. To validate the report, please visit BALUN website.

**Revision History**

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>May 19, 2017</u>	<u>Initial Issue</u>

**TABLE OF CONTENTS**

1	ADMINISTRATIVE DATA (GENERAL INFORMATION) .....	4
1.1	Identification of the Testing Laboratory .....	4
1.2	Identification of the Responsible Testing Location .....	4
1.3	Laboratory Condition .....	4
1.4	Announce .....	4
2	PRODUCT INFORMATION .....	5
2.1	Applicant .....	5
2.2	Manufacturer .....	5
2.3	Factory .....	5
2.4	General Description for Equipment under Test (EUT) .....	5
2.5	Ancillary Equipment .....	6
2.6	Technical Information .....	7
2.7	Additional Instructions .....	8
2.8	Channel List .....	10
3	SUMMARY OF TEST RESULTS .....	12
3.1	Test Standards .....	12
3.2	Verdict .....	12
4	GENERAL TEST CONFIGURATIONS .....	13
4.1	Test Environments .....	13
4.2	Test Equipment List .....	13
4.3	Measurement Uncertainty .....	14
4.4	Description of Test Setup .....	15
5	TEST ITEMS .....	18
5.1	RF Output Power .....	18
5.2	Emission Bandwidth and 6 dB Bandwidth .....	19
5.3	Power Spectral density (PSD) .....	20

5.4	Conducted Emission .....	21
5.5	Conducted Spurious Emission and Band Edge (Authorized-band) .....	22
5.6	Radiated Spurious Emissions and Band Edge (Restricted-band).....	24
5.7	Frequency Stability .....	29
ANNEX A	TEST RESULT .....	30
A.1	RF Output Power .....	30
A.2	Emission Bandwidth & 99% Bandwidth .....	32
A.3	6 dB Bandwidth .....	33
A.4	Power Spectral Density .....	34
A.5	Conducted Emissions .....	36
A.6	Conducted Spurious Emission and Band Edge (Authorized-band) .....	42
A.7	Radiated Spurious Emissions and Band Edge (Restricted-band).....	43
A.8	Frequency Stability .....	58
ANNEX B	TEST SETUP PHOTOS .....	60
ANNEX C	EUT EXTERNAL PHOTOS .....	60
ANNEX D	EUT INTERNAL PHOTOS .....	60

# 1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

## 1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

## 1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	<p>The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1.</p> <p>The laboratory has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625.</p> <p>The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.</p>
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

## 1.3 Laboratory Condition

Ambient Temperature	20 to 25°C
Ambient Relative Humidity	45% - 55%
Ambient Pressure	100 kPa - 102 kPa

## 1.4 Announce

- (1) The test report reference to the report template version v4.0.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

## 2 PRODUCT INFORMATION

### 2.1 Applicant

Applicant	SHENZHEN COSHIP ELECTRONICS CO., LTD.
Address	A6 Floor, Rainbow Building, 5th Zone, North, Hi-tech Industrial Park, Nanshan District, Shenzhen, China

### 2.2 Manufacturer

Manufacturer	SHENZHEN COSHIP ELECTRONICS CO., LTD.
Address	A6 Floor, Rainbow Building, 5th Zone, North, Hi-tech Industrial Park, Nanshan District, Shenzhen, China

### 2.3 Factory

Factory	Nantong Coship Electronics Co., Ltd.
Address	No.188, Xincheng Road, Nantong, China

### 2.4 General Description for Equipment under Test (EUT)

EUT Type	OTT STB V3
Model Name Under Test	N9090
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	YMB.A346.C
Software Version	N9090.100.001, N9090. XXX. YYY( "XXX.YYY" will not change the radio frequency parameters, "XXX" stands for the version of software, start from 100, 101, 102..... , it's used for checking software version on the network, and trigger the upgrading process. "YYY" stands for the serial number of code modify, start from 001,002..... , it's used for engineer to locate the detail modify point of code. And the update on XXX. YYY will not change the radio frequency conformance of this produce. )
Network and Wireless connectivity	WIFI 802.11a,802.11b, 802.11g and 802.11n (HT20/40)

## 2.5 Ancillary Equipment

Ancillary Equipment 1	Adapter 1	
	Brand Name	MASS
	Model No.	NBS12E050150VU (US Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.3 A, 50/60 Hz
	Rated Output	5 V=, 1.5 A
Ancillary Equipment 2	Adapter 2	
	Brand Name	N/A
	Model No.	RJ-AS050150U003-A (US Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.5 A, 50/60 Hz
	Rated Output	5 V=, 1.5 A
Ancillary Equipment 3	Adapter 3	
	Brand Name	DVE
	Model No.	DSA-12PFU-05 FUS 050150 (US Plug)
	Serial No.	N/A
	Rated Input	100-240 V~, 0.5 A, 50/60 Hz
	Rated Output	5 V=, 1.5 A
Ancillary Equipment 4	Remote Control	



## 2.6 Technical Information

Frequency Range		Band I: 5150 MHz to 5250 MHz, Band IV: 5725 MHz to 5850 MHz
Modulation technology		OFDM
Modulation Type		256QAM, 64QAM, 16QAM, BPSK, QPSK
Product Type		Mobile
Transfer Rate (Mbps) (Single RF path)		802.11a: 54/ 48/ 36 / 24 / 18 / 9/ 6 Mbps 802.11n: up to 150 Mbps
Channel Bandwidth		802.11a: 20 MHz 802.11n: 20 MHz, 40 MHz
Maximum Output Power		Band I: 17.7 dBm Band IV: 10.5 dBm
Antenna System (eg., MIMO, Smart Antenna)		Cyclic Delay Diversity (CDD) for 802.11n Basic methodology with NANT transmit antennas, each with the same directional gain GANT dBi for 802.11a
Categorization as Correlated or Completely Uncorrelated		Correlated
Antenna Type	Antenna 0 (ANT 0)	PIFA Antenna
	Antenna 1 (ANT 1)	
Antenna Gain	Antenna 0 (ANT 0)	Band I: 5150 MHz to 5250 MHz: 2 dBi Band IV: 5725 MHz to 5850 MHz: 2 dBi
	Antenna 1 (ANT 1)	Band I: 5150 MHz to 5250 MHz: 2.2 dBi Band IV: 5725 MHz to 5850 MHz: 2.2 dBi
Total directional gain for 802.11n	For power spectral density(PSD) measurements	Band I: 5150 MHz to 5250 MHz: 5.2 dBi Band IV: 5725 MHz to 5850 MHz: 5.2 dBi Formulas: Directional gain = GANT + Array Gain, <i>Array Gain</i> = $10 \log(NANT/NSS)$ dB. NSS=1, GANT set equal to the gain of the antenna having the highest gain.
	For power measurements	Band I: 5150 MHz to 5250 MHz: 2.2 dBi Band IV: 5725 MHz to 5850 MHz: 2.2 dBi Formulas: Directional gain = GANT + Array Gain, <i>Array Gain</i> = 0.
Total directional gain for 802.11a	For power spectral density(PSD) measurements	Band I: 5150 MHz to 5250 MHz: 2.1 dBi Band IV: 5725 MHz to 5850 MHz: 2.1 dBi Formulas: Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10}) / N_{ANT}]$ dBi.
	For power measurements	Band I: 5150 MHz to 5250 MHz: 2.1 dBi Band IV: 5725 MHz to 5850 MHz: 2.1 dBi Formulas: Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10}) / N_{ANT}]$ dBi.

## 2.7 Additional Instructions

Mode	<input checked="" type="checkbox"/> Special software is used. The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.
------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

EUT Software Settings:

Test Software Version	QA Test MFC Application 1.0.3.19		
Support Units (Software installation media)	Description	Manufacturer	Model
	Laptop	Lenovo	X220

Band I (5150 - 5250 MHz ) Power level setup in software

Mode	Channel	Frequency (MHz)	Soft Set	
			ANT 0	ANT 1
11a	CH36	5180	1B	1C
11a	CH44	5220	1B	1C
11a	CH48	5240	1B	1C
11n (HT20)	CH36	5180	1B	1C
11n (HT20)	CH44	5220	1B	1C
11n (HT20)	CH48	5240	1B	1C
11n (HT40)	CH38	5190	16	16
11n (HT40)	CH46	5230	16	16

Band IV (5725 - 5850 MHz ) Power level setup in software

Mode	Channel	Frequency (MHz)	Soft Set	
			ANT 0	ANT 1
11a	CH149	5745	13	13
11a	CH157	5785	13	13
11a	CH165	5825	13	13
11n (HT20)	CH149	5745	OF	OF
11n (HT20)	CH157	5785	OF	OF
11n (HT20)	CH165	5825	OF	OF
11n (HT40)	CH151	5755	OF	OF
11n (HT40)	CH159	5795	OF	OF



## Run Software

MT7662 QA V1.0.3.14

PCI Config | TX/RX | EEPROM | EEPROM2 | MAC | BBP | RF Page | About | NOR-Flash

MAC Address: 102017025F75 Set Radio On/Off: On Off Accessory RF Type: MT7662 :: 2 T 2 R

Channel: 36 5180-MHz Mode: OFDM Rate: MCS=7: 54 Mbps System BW: 20 Per-Pkt: 20 Primary Sel.TX BF: 0 Non PTSCA: Dis

GDS: Nss: 1

TX

Frame Type: [15] Data Set TxID Temp. Com. TSSI LDPC STBC 2.4G Side Band Opt. Antenna diversity

Cal Temp. TSSI DC Cal SGI A-MPDU Main Aux

TX frame setting

FC	Dur	Address1 (6)	Address2	Address3 (6)	Seq
0800	0000	FFFFFFFFFFFF	102017025F75	000A40AABCC	0000

Wait for AC

Payload: Debug Inf h Inc Random

Payload: Repeat: AA SW CRC Check: Total: 1058

SW CRC

Cal FW Msg

1. R-Calibration

Full /

0-Full Cal

100 Robust Test

Repeat: 0 LoopBack IPG: 200 TX Power0 (0.5dB): 13 TX Power1 (0.5dB): 13 Freq. SE Calibrate

Start TX Transmitted: 0

Conti. 1 Carrier t. Carrier Suppress: Calibrate

Both DACs DAC 0 DAC 1

RX

RX Error (Dropped)

FCS error	0 / 0
RX overflow	0 / 0
PHY error :	0 / 0
False CCA :	0 / 0
Frame Loss	0%

RX Okay

U2M DATA :	0 / 0
Other DATA :	0 / 0
Beacon :	0 / 0
Others (Mgmt/Cntl):	0 / 0
FER :	0%

RSSI tune

RSSI1 =	xx dBm Offse	00
RSSI2 =	xx dBm Offse	0
RSSI0 =	xx dBm Offse	00

Freq. Deviation: xxx KHz / xx ppm

One RX Path RX 0

SNR0 : xx dB SNR1 : xx dB

Auto Response Start RX Reset counter Capture Mode

BBP Temp.Com. Temper. Cal Set Tx Env... Dump DMA Load DMA Dump Log

## 2.8 Channel List

20 MHz		40 MHz		80 MHz	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
<b>36</b>	<b>5180</b>	<b>38</b>	<b>5190</b>	--	--
40	5200	<b>46</b>	<b>5230</b>	--	--
<b>44</b>	<b>5220</b>	<b>54</b>	<b>5270</b>	--	--
<b>48</b>	<b>5240</b>	<b>62</b>	<b>5310</b>	--	--
<b>52</b>	<b>5260</b>	<b>102</b>	<b>5510</b>	--	--
56	5280	110	5550	--	--
<b>60</b>	<b>5300</b>	<b>134</b>	<b>5670</b>	--	--
<b>64</b>	<b>5320</b>	<b>151</b>	<b>5755</b>	--	--
<b>100</b>	<b>5500</b>	<b>159</b>	<b>5790</b>	--	--
104	5520	--	--	--	--
108	5540	--	--	--	--
112	5560	--	--	--	--
<b>116</b>	<b>5580</b>	--	--	--	--
132	5660	--	--	--	--
136	5680	--	--	--	--
<b>140</b>	<b>5700</b>	--	--	--	--
<b>149</b>	<b>5745</b>	--	--	--	--
153	5765	--	--	--	--
<b>157</b>	<b>5785</b>	--	--	--	--
161	5805	--	--	--	--
<b>165</b>	<b>5825</b>	--	--	--	--

Note: Until further notice, devices subject to this section shall not be capable of transmitting in the band 5600-5650 MHz. This restriction is for the protection of weather radars operating in this band.

The Lowest frequency, the middle frequency and the highest frequency of channel were selected to perform the test, and the selected channel see below:

For 802.11a/n(HT20)

Band I (5150 - 5250 MHz)			Band IV (5725 - 5850 MHz)		
Channel Number	Channel Number	Channel Number	Channel Number	Channel	Frequency (MHz)
36	149	149	149	Low	5260
44	157	157	157	Mid	5300
48	165	165	165	High	5320

For 802.11n (HT40)

Band I (5150 - 5250 MHz)			Band IV (5725 - 5850 MHz)		
Channel Number	Channel Number	Channel Number	Channel Number	Channel	Frequency (MHz)
38	151	151	151	Low	5270
46	159	159	159	High	5310

Note: Preliminary tests were performed in different data rate in above table to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Modulation Type	Band I	Band IV
				Channel	Channel
RF Output Power	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
Emission Bandwidth & 99% Occupied Bandwidth	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
6 dB bandwidth	11a	6	BPSK	N/A	165/157/149
	11n(20 MHz)	6.5		N/A	165/157/149
	11n(40 MHz)	13.5		N/A	159/151
Power Spectral Density	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
Conducted Spurious Emission and Band Edge (Authorized-band)	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
Radiated Spurious Emissions	11a	6	BPSK	48/44/36	165/157/149
	11n(20 MHz)	6.5		48/44/36	165/157/149
	11n(40 MHz)	13.5		46/38	159/151
Band Edge (Restricted-band)	11a	6	BPSK	48/36	165/149
	11n(20 MHz)	6.5		48/36	165/149
	11n(40 MHz)	13.5		46/38	159/151
Frequency Stability	Unmodulated	N/A	N/A	165	

### 3 SUMMARY OF TEST RESULTS

#### 3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15 Subpart E (10-1-15 Edition)	Unlicensed National Information Infrastructure Devices
2	KDB Publication 789033 D02v01r03	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E
3	KDB Publication 662911 D01v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band (e.g., MIMO, Smart Antenna, etc)
4	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

#### 3.2 Verdict

No.	Description	FCC Part No.	Test Result	Verdict
1	Antenna Requirement	15.203	--	Pass <sup>Note1</sup>
2	RF Output Power	15.407(a)	ANNEX A.1	Pass
3	Emission Bandwidth & 99% Occupied Bandwidth	15.407(a)	ANNEX A.2	Pass
4	6 dB bandwidth	15.407(e)	ANNEX A.3	Pass
5	Power Spectral Density	15.407(a)	ANNEX A.4	Pass
6	Conducted Emission	15.207	ANNEX A.5	Pass
7	Conducted Spurious Emission and Band Edge (Authorized-band)	15.407(b) 15.209	ANNEX A.6	Pass
8	Radiated Spurious Emissions and Band Edge (Restricted-band)	15.407(b)	ANNEX A.7	Pass
9	Frequency Stability	15.407(g)	ANNEX A.8	Pass
10	Receiver Spurious Emissions	--	--	N/A <sup>Note2</sup>

Note <sup>1</sup>: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.

Note <sup>2</sup>: Only radio communication receivers operating in stand-alone mode within the band 30-960 MHz, as well as scanner receivers, are subject to Industry Canada requirements, so this test is not applicable

## 4 GENERAL TEST CONFIGURATIONS

### 4.1 Test Environments

During the measurement, the normal environmental conditions were within the listed ranges:

Relative Humidity	45% - 55%	
Atmospheric Pressure	100 kPa - 102 kPa	
Temperature	NT (Normal Temperature)	+22°C to +25°C
	LT (Low Temperature)	-10°C
	HT (High Temperature)	+40°C
Working Voltage of the EUT	NV (Normal Voltage)	5 V
	LV (Low Voltage)	4.5 V
	HV (High Voltage)	5.5 V

### 4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-30	103118	2016.07.13	2017.07.12
Switch Unit with OSP-B157	ROHDE&SCHWARZ	OSP120	101270	2016.07.13	2017.07.12
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2016.09.09	2017.09.08
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2016.07.05	2017.07.04
LISN	SCHWARZBECK	NSLK 8127	8127-687	2016.07.05	2017.07.04
Bluetooth Tester	ROHDE&SCHWARZ	CBT	101005	2016.07.13	2017.07.12
Power Splitter	KMW	DCPD-LDC	1305003215	--	--
Power Sensor	ROHDE&SCHWARZ	NRP-Z21	103971	2016.07.13	2017.07.12
Attenuator (20 dB)	KMW	ZA-S1-201	110617091	--	--
Attenuator (6 dB)	KMW	ZA-S1-61	1305003189	--	--
DC Power Supply	ROHDE&SCHWARZ	HMP2020	018141664	2016.07.13	2017.07.12
Temperature Chamber	ANGELANTIONI SCIENCE	NTH64-40A	1310	2016.07.13	2017.07.12
Test Antenna- Loop(9 kHz-30 MHz)	SCHWARZBECK	FMZB 1519	1519-037	2015.07.22	2017.07.21
Test Antenna- Bi-Log(30 MHz-3 GHz)	SCHWARZBECK	VULB 9163	9163-624	2015.07.22	2017.07.21
Test Antenna- Horn(1-18 GHz)	SCHWARZBECK	BBHA 9120D	9120D-1148	2015.07.22	2017.07.21
Test Antenna- Horn(15-26.5 GHz)	SCHWARZBECK	BBHA 9170	9170-305	2015.07.22	2017.07.21
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2019.02.20
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60 *7.35m	N/A	2016.08.09	2018.08.08
Shielded Enclosure	ChangNing	CN-130701	130703	--	--
Signal Generator	ROHDE&SCHWARZ	SMB100A	177746	2016.07.13	2017.07.12
Power Amplifier	OPHIR RF	5225F	1037	2017.02.17	2018.02.16

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Power Amplifier	OPHIR RF	5273F	1016	2017.02.17	2018.02.16
Directional Coupler	Werlantone	C5982-10	109275	N/A	N/A
Directional Coupler	Werlantone	CHP-273E	S00801z-01	N/A	N/A
Feld Strength Meter	Narda	EP601	511WX51129	2017.02.23	2018.02.22
Mouth Simulator	B&K	4227	2423931	2016.11.15	2017.11.14
Sound Calibrator	B&K	4231	2430337	2016.11.09	2017.11.08
Sound Level Meter	B&K	NL-20	00844023	2016.11.11	2017.11.10
Ear Simulator	B&K	4185	2409449	2016.11.15	2017.11.14
Ear Simulator	B&K	4195	2418189	2016.11.15	2017.11.14
Audio analyzer	B&K	UPL 16	100129	2016.11.08	2017.11.07

### 4.3 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

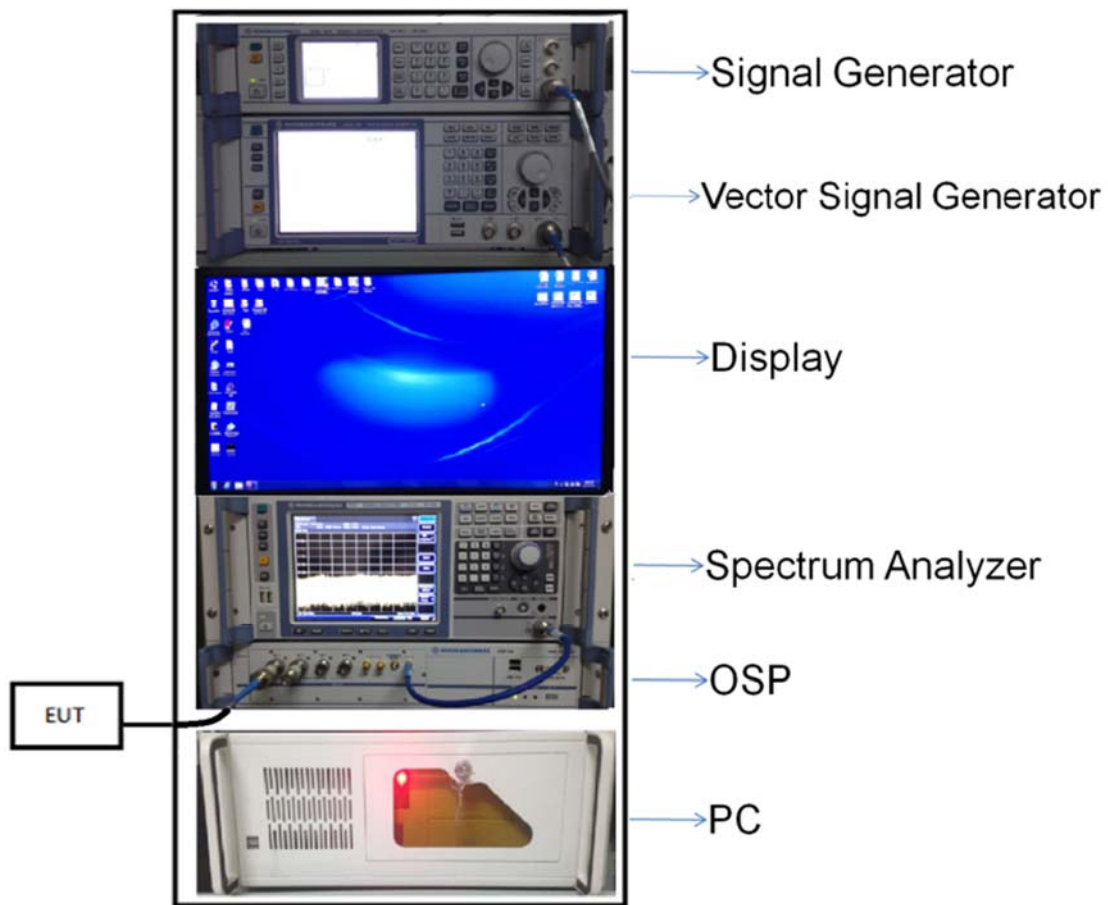
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Occupied Channel Bandwidth	±4%
RF output power, conducted	±1.4 dB
Power Spectral Density, conducted	±2.5 dB
Unwanted Emissions, conducted	±2.8 dB
All emissions, radiated	±5.4 dB
Temperature	±1°C
Humidity	±4%



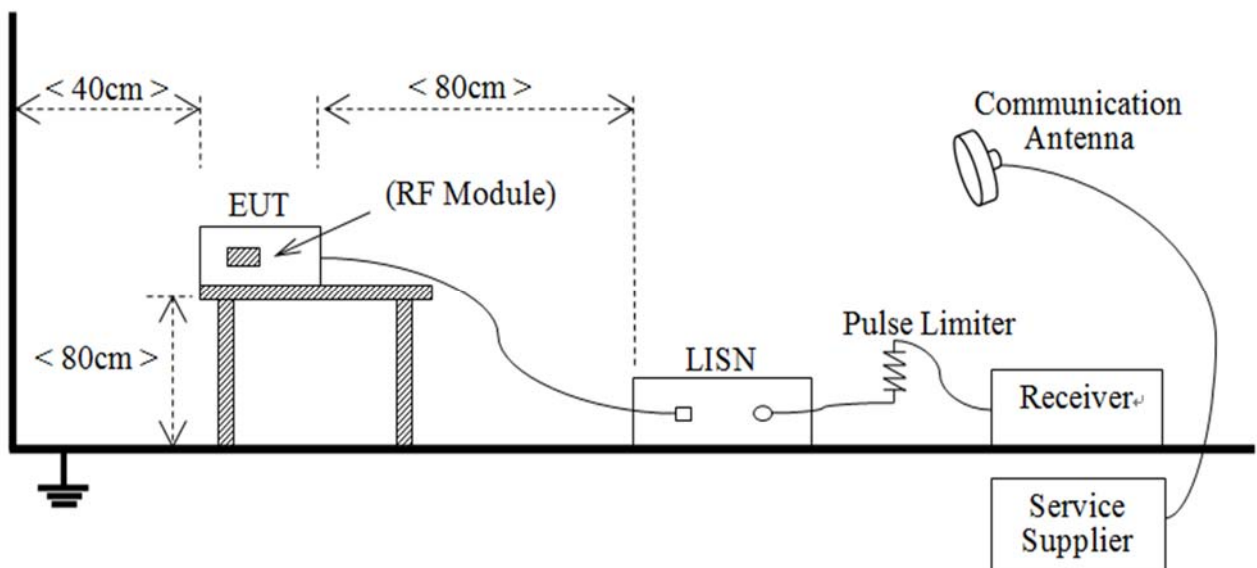
## 4.4 Description of Test Setup

### 4.4.1 For Antenna Port Test



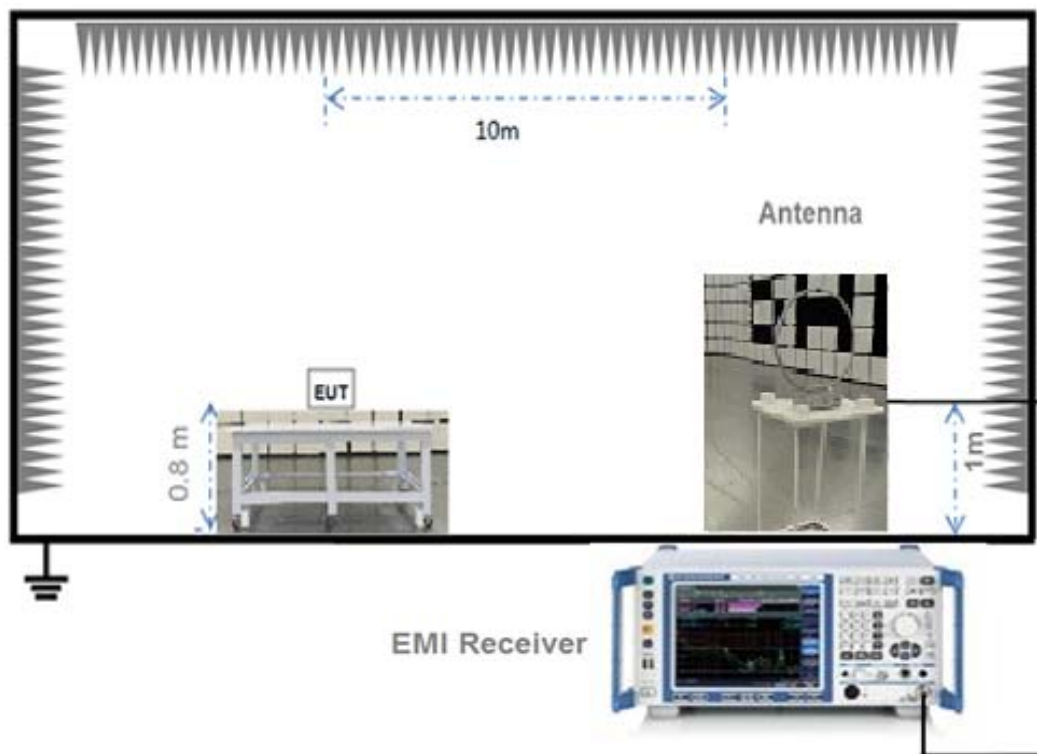
(Diagram 1)

### 4.4.2 For AC Power Supply Port Test



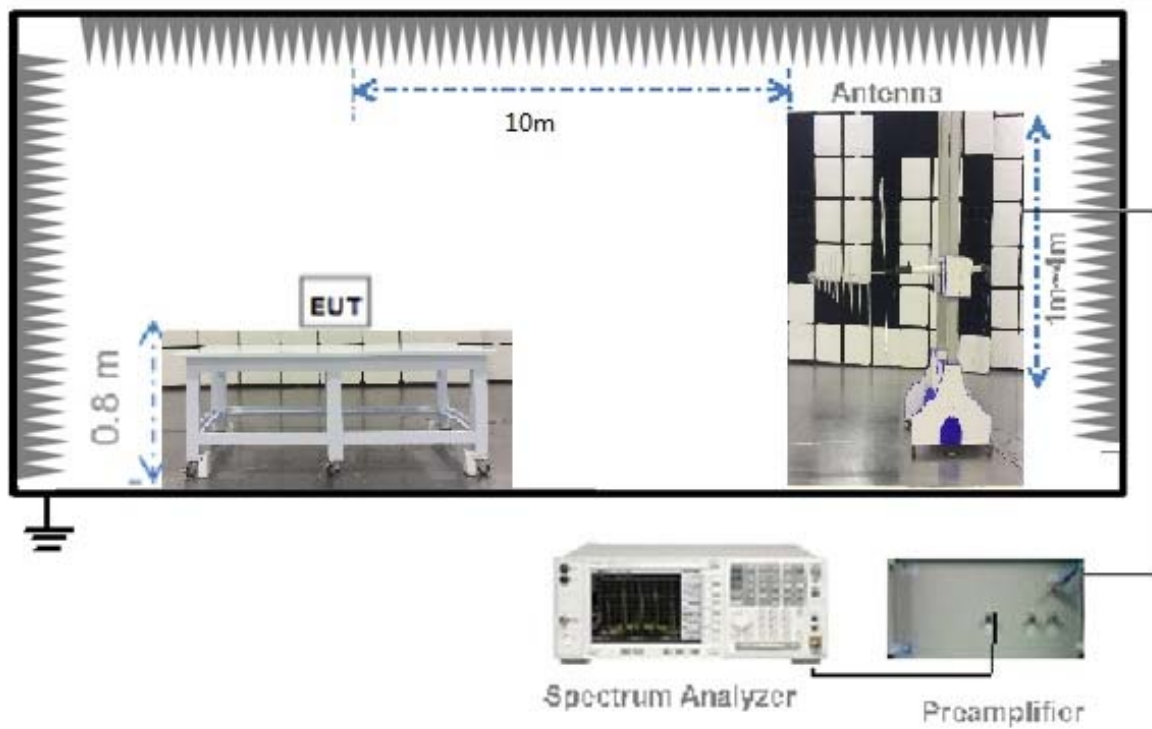
(Diagram 2)

#### 4.4.3 For Radiated Test (Below 30 MHz)



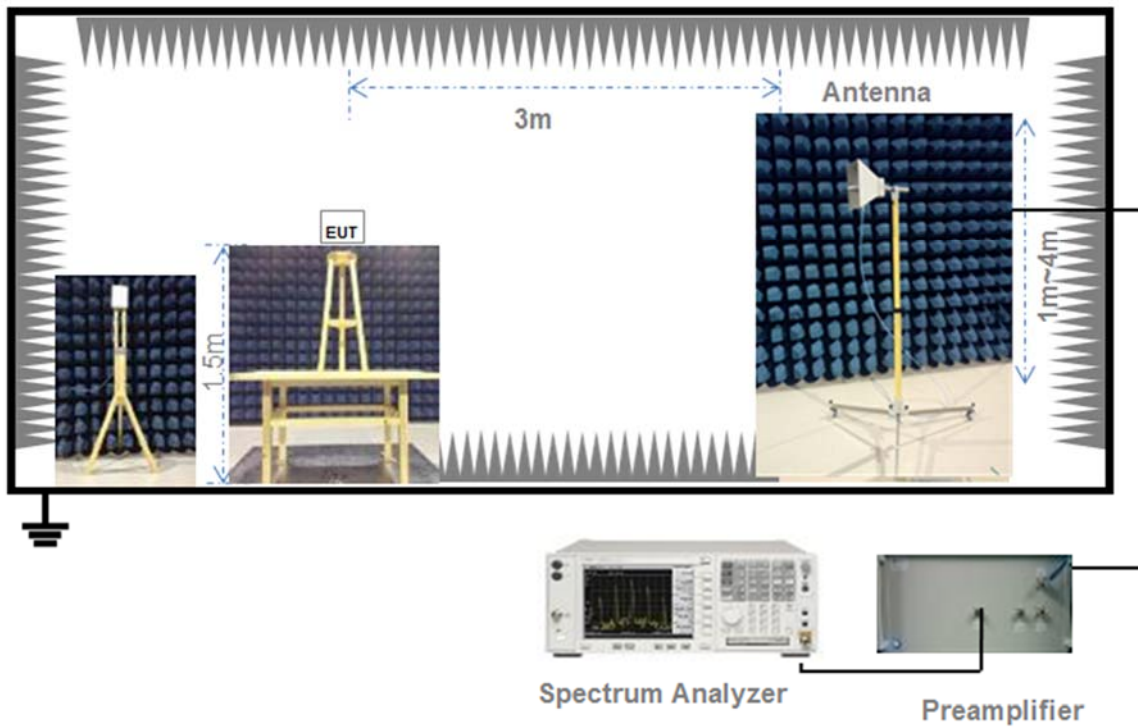
(Diagram 3)

#### 4.4.4 For Radiated Test (30 MHz-1 GHz)



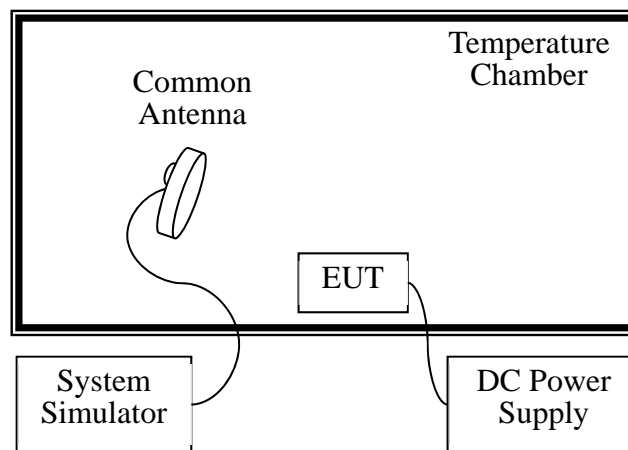
(Diagram 4)

#### 4.4.5 For Radiated Test (Above 1 GHz)



(Diagram 5)

#### 4.4.6 For Frequency Stability Test



(Diagram 6)

## 5 TEST ITEMS

### 5.1 RF Output Power

#### 5.1.1 Test Limit

FCC §15.407(a)

The maximum conducted output power should not exceed:

Frequency Band (MHz)	Limit
5150-5250	250 mW
5250-5350	250 mW or 11 dBm + 10log B, whichever is less.
5470-5725	250 mW or 11 dBm + 10log B, whichever is less.
5725-5850	1 W
Note: Where "B" is the 26 dB emissions bandwidth in MHz.	

RSS-247, 6.2

The maximum conducted output power shall not exceed:

Frequency Band (MHz)	Limit
5150-5250	N/A
5250-5350	250 mW or 11 dBm + 10log B, whichever is less.
5470-5725	250 mW or 11 dBm + 10log B, whichever is less.
5725-5850	1 W
Note: Where "B" is the 99% emissions bandwidth in MHz.	

The maximum e.i.r.p. shall not exceed:

Frequency Band (MHz)	Limit
5150-5250	200 mW or 10 dBm + 10log B, whichever is less.
5250-5350	1W or 17 dBm + 10log B, whichever is less.
5470-5725	1W or 17 dBm + 10log B, whichever is less.
5725-5850	N/A
Note: Where "B" is the 99% emissions bandwidth in MHz.	

#### 5.1.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

#### 5.1.3 Test Procedure

The maximum peak conducted output power may be measured using a broadband Average RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the emission bandwidth and utilize a fast-responding diode detector.

The E.I.R.P used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.

#### 5.1.4 Test Result

Please refer to ANNEX A.1.

## 5.2 Emission Bandwidth and 6 dB Bandwidth

### 5.2.1 Limit

FCC §15.407(a), RSS-247, 6.2

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

### 5.2.2 Test Setup

The test setup photo please refer to 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

### 5.2.3 Test Procedure

#### Emission bandwidth

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set VBW  $\geq 3 \times$  RBW,
3. Detector = Peak.
4. Trace mode = Max hold.
5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

#### Occupied Bandwidth

1. Set Span = 1.5 times to 5.0 times the OBW
2. Set RBW = 1% to 5% of the OBW.
3. Set VBW  $\geq 3 \times$  RBW, Detector = Peak.
4. Trace mode = Max hold.
5. Use the 99% power bandwidth function of the instrument.

#### 6 dB bandwidth

1. Set RBW = 100 kHz, VBW = 300 kHz.
2. Detector = Peak. Trace mode = Max hold.
3. Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

### 5.2.4 Test Result

Please refer to ANNEX A.2 and ANNEX A.3.

## 5.3 Power Spectral density (PSD)

### 5.3.1 Limit

FCC §15.407(a)

The maximum power spectral density should not exceed:

Frequency Band (MHz)	Limit
5150-5250	11 dBm/MHz
5250-5350	11 dBm/MHz
5470-5725	11 dBm/MHz
5725-5850	30 dBm/500kHz

RSS-247, 6.2

The maximum power spectral density should not exceed:

Frequency Band (MHz)	Limit
5150-5250	N/A
5250-5350	11 dBm/MHz
5470-5725	11 dBm/MHz
5725-5850	30 dBm/500kHz

The e.i.r.p. spectral density should not exceed:

Frequency Band (MHz)	Limit
5150-5250	10 dBm/MHz
5250-5350	N/A
5470-5725	N/A
5725-5850	N/A

### 5.3.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

### 5.3.3 Test Procedure

Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth.

1. Set RBW = 510 kHz/1 MHz, VBW  $\geq 3 \times$  RBW, Sweep time = Auto, Detector = RMS.
2. Allow the sweeps to continue until the trace stabilizes.
3. Use the peak marker function to determine the maximum amplitude level.
4. The E.I.R.P spectral density used radiated test method. At a test site that has been validated using the procedures of ANSI C63.4 or the latest CISPR 16-1-4 for measurements above 1 GHz, so as to simulate a near free-space environment.

### 5.3.4 Test Result

Please refer to ANNEX A.4.



## 5.4 Conducted Emission

### 5.4.1 Limit

FCC §15.207, RSS-GEN, 8.8

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 $\mu$ H/50 $\Omega$  line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dB $\mu$ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

### 5.4.2 Test Setup

The section 4.4.2 (Diagram 2) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

### 5.4.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

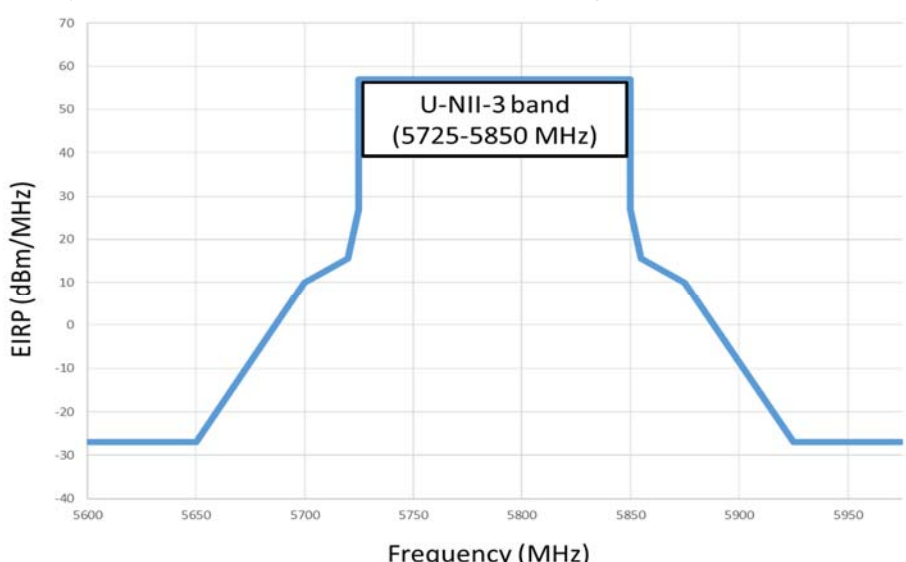
### 5.4.4 Test Result

Please refer to ANNEX A.5.

## 5.5 Conducted Spurious Emission and Band Edge (Authorized-band)

### 5.5.1 Limit

FCC §15.407(b)

Un-restricted band emissions	
Frequency Band (MHz)	Limit
5150 - 5250	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm
5250 - 5350	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm
5470 - 5725	Outside of the 5.47-5.725 GHz band: e.i.r.p. -27 dBm
5725 - 5850	<p>All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</p> 

RSS-247, 6.2

Un-restricted band emissions	
Frequency Band (MHz)	Limit
5150 - 5250	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm, However, any unwanted emissions that fall into the band 5250-5350 MHz must be 26 dBc, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth, above 5.25 GHz.
5250 - 5350	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm. And any emissions within the band 5150-5250 MHz shall meet the power spectral density limits of 10 dBm/MHz, The device shall be labelled "for indoor use only."
5470 - 5725	Outside of the 5.47-5.725 GHz band: e.i.r.p. -27 dBm
5725 - 5850	<p>5715 -5725 MHz: e.i.r.p. -17 dBm</p> <p>5850 -5860 MHz: e.i.r.p. -17 dBm</p> <p>Other un-restricted band: e.i.r.p. -27 dBm</p>

### 5.5.2 Test Setup

See section 4.4.2 (Diagram 2) for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

### 5.5.3 Test Procedure

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.

RBW = 1 MHz for  $f \geq 1$  GHz, 100 kHz for  $f < 1$  GHz

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak

Trace = max hold

Allow the trace to stabilize

### 5.5.4 Test Result

Please refer to ANNEX A.6.

## 5.6 Radiated Spurious Emissions and Band Edge (Restricted-band)

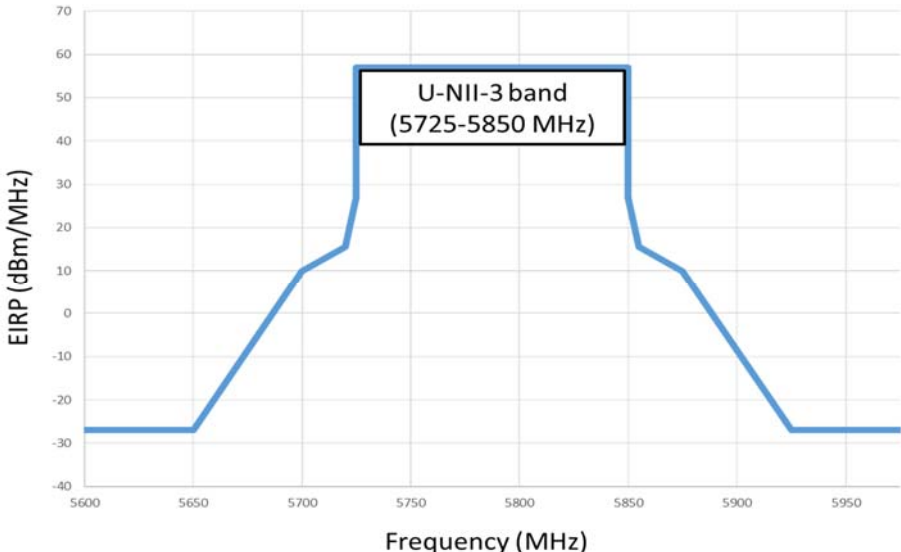
### 5.6.1 Limit

FCC §15.209 & 15.407(b), RSS-247, 6.2

Frequency (MHz)	Field Strength ( $\mu\text{V/m}$ )	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Note<sup>1</sup>: The Limit for radiated test was performed according to FCC Part 15C

Note<sup>2</sup>: The tighter limit applies at the band edge.

Un-restricted band emissions	
Out Operating Band (MHz)	Limit
5150 - 5250	e.i.r.p. -27 dBm (68.2 dBuV/m@3m)
5250 - 5350	e.i.r.p. -27 dBm (68.2 dBuV/m@3m)
5470 - 5725	e.i.r.p. -27 dBm (68.2 dBuV/m@3m)
5725 - 5850	<p>All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</p> 

Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength.

### 5.6.2 Test Setup

The section 4.4.3-4.4.5 (Diagram 3 - Diagram 5) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

### 5.6.3 Test Procedure

Since the emission limits are specified in terms of radiated field strength levels, measurements performed to demonstrate compliance have traditionally relied on a radiated test configuration. Radiated measurements remain the principal method for demonstrating compliance to the specified limits; however antenna-port conducted measurements are also now acceptable to demonstrate compliance (see below for details). When radiated measurements are utilized, test site requirements and procedures for maximizing and measuring radiated emissions that are described in ANSI C63.10 shall be followed.

Antenna-port conducted measurements may also be used as an alternative to radiated measurements for demonstrating compliance in the restricted frequency bands. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case spurious emissions is required.

### General Procedure for conducted measurements in restricted bands

- a) Measure the conducted output power (in dBm) using the detector specified (see guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).
- b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see guidance on determining the applicable antenna gain)
- c) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies  $\leq 30$  MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies  $> 1000$  MHz).
- d) For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).

- e) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$$E = \text{EIRP} - 20 \log D + 104.8$$

where:

E = electric field strength in dB $\mu$ V/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

- f) Compare the resultant electric field strength level to the applicable limit.
- g) Perform radiated spurious emission test.

### Quasi-Peak measurement procedure

The specifications for measurements using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable emission limits using a peak detector.

### Peak power measurement procedure

Peak emission levels are measured by setting the instrument as follows:

- a) RBW = as specified in Table 1.
- b) VBW  $\geq 3 \times$  RBW.
- c) Detector = Peak.
- d) Sweep time = auto.
- e) Trace mode = max hold.
- f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be longer for low duty cycle applications).



Table 1—RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Trace averaging across on and off times of the EUT transmissions followed by duty cycle correction

If continuous transmission of the EUT (i.e., duty cycle  $\geq 98$  percent) cannot be achieved and the duty cycle is constant (i.e., duty cycle variations are less than  $\pm 2$  percent), then the following procedure shall be used:

- a) The EUT shall be configured to operate at the maximum achievable duty cycle.
- b) Measure the duty cycle,  $x$ , of the transmitter output signal as described in section 6.0.
- c) RBW = 1 MHz (unless otherwise specified).
- d) VBW  $\geq 3 \times$  RBW.
- e) Detector = RMS, if  $\text{span}/(\# \text{ of points in sweep}) \leq (\text{RBW}/2)$ . Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.
- f) Averaging type = power (i.e., RMS).
  - 1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
  - 2) Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.
- g) Sweep time = auto.
- h) Perform a trace average of at least 100 traces.
- i) A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:
  - 1) If power averaging (RMS) mode was used in step f), then the applicable correction factor is  $10 \log(1/x)$ , where  $x$  is the duty cycle.
  - 2) If linear voltage averaging mode was used in step f), then the applicable correction factor is  $20 \log(1/x)$ , where  $x$  is the duty cycle.
  - 3) If a specific emission is demonstrated to be continuous ( $\geq 98$  percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

NOTE: Reduction of the measured emission amplitude levels to account for operational duty factor is not permitted. Compliance is based on emission levels occurring during transmission - not on an average across on and off times of the transmitter.

Determining the applicable transmit antenna gain

A conducted power measurement will determine the maximum output power associated with a restricted band emission; however, in order to determine the associated EIRP level, the gain of the transmitting antenna (in dBi) must be added to the measured output power (in dBm).

Since the out-of-band characteristics of the EUT transmit antenna will often be unknown, the use of a conservative antenna gain value is necessary. Thus, when determining the EIRP based on the measured conducted power, the upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands, or 2 dBi, whichever is greater. However, for devices that operate in multiple frequency bands while using the same transmit antenna, the highest gain of the antenna within the operating band nearest in frequency to the restricted band emission being measured may be used in lieu of the overall highest gain when the emission is at a frequency that is within 20 percent of the nearest band edge frequency, but in no case shall a value less than 2 dBi be used.

See KDB 662911 for guidance on calculating the additional array gain term when determining the effective antenna gain for a EUT with multiple outputs occupying the same or overlapping frequency ranges in the same band.

#### Radiated spurious emission test

An additional consideration when performing conducted measurements of restricted band emissions is that unwanted emissions radiating from the EUT cabinet, control circuits, power leads, or intermediate circuit elements will likely go undetected in a conducted measurement configuration. To address this concern, a radiated test shall be performed to ensure that emissions emanating from the EUT cabinet (rather than the antenna port) also comply with the applicable limits.

For these cabinet radiated spurious emission measurements the EUT transmit antenna may be replaced with a termination matching the nominal impedance of the antenna. Procedures for performing radiated measurements are specified in ANSI C63.10. All detected emissions shall comply with the applicable limits.

The measurement frequency range is from 30 MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for  $f \geq 1$  GHz, 100 kHz for  $f < 1$  GHz

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak

Trace = max hold

#### 5.6.4 Test Result

Please refer to ANNEX A.7 and Please refer to ANNEX A.9

## 5.7 Frequency Stability

### 5.7.1 Limit

FCC §15.407(g)

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

### 5.7.2 Test Setup

The section 4.4.6 (Diagram 6) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

### 5.7.3 Test Procedure

The EUT is installed in an environment test chamber with external power source.

Set the chamber to operate at 50 centigrade and external power source to output at nominal voltage of EUT.

A sufficient stabilization period at each temperatures is used prior to each frequency measurement.

When temperature is stabled, measure the frequency stability.

The test shall be performed under -30 to 50 centigrade and 85 to 115 percent of the nominal voltage.

Change setting of chamber and external power source to complete all conditions.

### 5.7.4 Test Result

Please refer to ANNEX A.8.

## ANNEX A TEST RESULT

### A.1 RF Output Power

Note: For FCC standard, if transmitting antennas of directional gain greater than 6 dBi are used, all band maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### Test Data

##### Conducted Power

Band I (5150 - 5250 MHz )								
Mode	Channel	Frequency (MHz)	Conducted Power (dBm)				FCC Limit (mW)	Verdict
			ANT0 (dBm)	ANT0 (mW)	ANT1 (dBm)	ANT1 (mW)		
11a	CH36	5180	15.93	39.17	14.69	29.44	250	Pass
11a	CH44	5220	15.80	38.02	14.67	29.31	250	Pass
11a	CH48	5240	16.00	39.81	14.69	29.44	250	Pass

Band I (5150 - 5250 MHz )										
Mode	Channel	Frequency (MHz)	Conducted Power (dBm)						FCC Limit (mW)	Verdict
			ANT0 (dBm)	ANT0 (mW)	ANT1 (dBm)	ANT1 (mW)	Total power (dBm)	Total power (mW)		
11n (HT20)	CH36	5180	15.37	34.43	13.58	22.80	17.58	57.24	250	Pass
11n (HT20)	CH44	5220	14.98	31.48	14.17	26.12	17.60	57.60	250	Pass
11n (HT20)	CH48	5240	15.21	33.19	14.09	25.64	17.70	58.83	250	Pass
11n (HT40)	CH38	5190	13.25	21.13	11.31	13.52	15.40	34.66	250	Pass
11n (HT40)	CH46	5230	12.99	19.91	11.26	13.37	15.22	33.27	250	Pass

Band IV (5725 - 5850 MHz )								
Mode	Channel	Frequency (MHz)	Conducted Power (dBm)				FCC Limit (mW)	Verdict
			ANT0 (dBm)	ANT0 (mW)	ANT1 (dBm)	ANT1 (mW)		
11a	CH149	5745	10.50	11.22	9.53	8.97	1000	Pass
11a	CH157	5785	9.83	9.62	9.03	8.00	1000	Pass
11a	CH165	5825	9.12	8.17	8.45	7.00	1000	Pass

Band IV (5725 - 5850 MHz )										
Mode	Channel	Frequency (MHz)	Conducted Power (dBm)						FCC Limit (mW)	Verdict
			ANT0 (dBm)	ANT0 (mW)	ANT1 (dBm)	ANT1 (mW)	Total power (dBm)	Total power (mW)		
11n (HT20)	CH149	5745	7.53	5.66	6.92	4.92	10.25	10.58	1000	Pass
11n (HT20)	CH157	5785	7.34	5.42	6.05	4.03	9.75	9.45	1000	Pass
11n (HT20)	CH165	5825	6.94	4.94	5.55	3.59	9.31	8.53	1000	Pass
11n (HT40)	CH151	5755	7.40	5.50	6.77	4.75	10.11	10.25	1000	Pass
11n (HT40)	CH159	5795	6.43	4.40	6.22	4.19	9.34	8.58	1000	Pass

## A.2 Emission Bandwidth & 99% Bandwidth

Note: Test plots please refer to the document “Annex No.: BL-SZ1740210-602 Data Part 1.pdf”.

### Test Data

Band I (5150 - 5250 MHz )						
Mode	Channel	Frequency	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)	
		(MHz)	ANT0	ANT1	ANT0	ANT1
11a	CH36	5180	18.64	18.66	16.42	16.44
11a	CH44	5220	19.10	18.82	16.42	16.46
11a	CH48	5240	19.34	18.78	16.50	16.42
11n (HT20)	CH36	5180	19.46	19.40	17.60	17.56
11n (HT20)	CH44	5220	19.38	19.52	17.58	17.56
11n (HT20)	CH48	5240	19.66	19.20	17.58	17.56
11n (HT40)	CH38	5190	38.14	38.14	35.90	35.90
11n (HT40)	CH46	5230	38.20	38.28	35.88	35.92

Band IV (5725 - 5850 MHz )						
Mode	Channel	Frequency	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)	
		(MHz)	ANT0	ANT1	ANT0	ANT1
11a	CH149	5745	18.76	18.62	16.44	16.46
11a	CH157	5785	18.60	18.96	16.44	16.44
11a	CH165	5825	18.74	19.06	16.44	16.42
11n (HT20)	CH149	5745	19.40	19.42	17.58	17.54
11n (HT20)	CH157	5785	19.28	19.46	17.56	17.60
11n (HT20)	CH165	5825	19.38	19.36	17.56	17.60
11n (HT40)	CH151	5755	38.12	38.04	35.90	35.88
11n (HT40)	CH159	5795	38.20	38.46	35.94	35.96



### A.3 6 dB Bandwidth

Note: Test plots please refer to the document “Annex No.: BL-SZ1740210-602 Data Part 2.pdf”.

#### Test Data

Band IV (5725 - 5850 MHz )						
Mode	Channel	Frequency	6 dB Bandwidth (MHz)		Limit (MHz)	Verdict
			ANT0	ANT1		
11a	CH149	5745	16.47	16.37	0.5	Pass
11a	CH157	5785	16.12	16.47	0.5	Pass
11a	CH165	5825	16.47	16.47	0.5	Pass
11n (HT20)	CH149	5745	17.67	15.77	0.5	Pass
11n (HT20)	CH157	5785	17.32	17.77	0.5	Pass
11n (HT20)	CH165	5825	17.67	17.77	0.5	Pass
11n (HT40)	CH151	5755	36.37	35.77	0.5	Pass
11n (HT40)	CH159	5795	34.82	36.42	0.5	Pass

## A.4 Power Spectral Density

Note: Test plots please refer to the document “Annex No.: BL-SZ1740210-602 Data Part 3.pdf”.

### Test Data

Band I (5150 - 5250 MHz)						
Note 1: Transmitting antennas of directional gain in Band I( 5150 MHz to 5250 MHz) is 2.1 dBi Formulas: Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10}) / N_{ANT}]$ dBi. Note 2: The total PSD method used the sum spectra maxima across the outputs.						
Mode	Channel	Frequency (MHz)	PSD (dBm/MHz)		Limit (dBm/MHz)	Verdict
			ANT0	ANT1		
11a	CH36	5180	4.31	2.95	11	Pass
11a	CH44	5220	4.04	2.86	11	Pass
11a	CH48	5240	4.20	2.91	11	Pass

Band I (5150 - 5250 MHz)							
Note 1: Transmitting antennas of directional gain in Band I( 5150 MHz to 5250 MHz) is 2.1 dBi Formulas: Directional gain = 10 log[(10 <sup>G1 /10</sup> + 10 <sup>G2 /10</sup> + ... + 10 <sup>GN /10</sup> ) /N <sub>ANT</sub> ] dBi. Note 2: The total PSD method used the sum spectra maxima across the outputs.							
Mode	Channel	Frequency (MHz)	PSD (dBm/MHz)			Limit (dBm/MHz)	Verdict
			ANT0	ANT1	Total PSD		
11n (HT20)	CH36	5180	3.66	2.18	5.99	11	Pass
11n (HT20)	CH44	5220	3.36	2.08	5.78	11	Pass
11n (HT20)	CH48	5240	3.16	2.08	5.66	11	Pass
11n (HT40)	CH38	5190	-2.49	-4.51	-0.37	11	Pass
11n (HT40)	CH46	5230	-2.56	-4.56	-0.44	11	Pass

Band IV (5725 - 5850 MHz)						
Note 1: Transmitting antennas of directional gain in Band I( 5150 MHz to 5250 MHz) is 2.1 dBi Formulas: Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10}) / N_{ANT}]$ dBi. Note 2: The total PSD method used the sum spectra maxima across the outputs.						
Mode	Channel	Frequency (MHz)	PSD(dBm/500kHz)		Limit (dBm/500kHz)	Verdict
			ANT0	ANT1		
11a	CH149	5745	-4.12	-5.11	30	Pass
11a	CH157	5785	-4.66	-5.48	30	Pass
11a	CH165	5825	-5.16	-6.23	30	Pass

## Band IV (5725 - 5850 MHz)

Note 1: Transmitting antennas of directional gain in Band I( 5150 MHz to 5250 MHz) is 2.1 dBi

Formulas: Directional gain =  $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10}) / N_{ANT}]$  dBi.

Note 2: The total PSD method used the sum spectra maxima across the outputs.

Mode	Channel	Frequency (MHz)	PSD(dBm/500kHz)			Limit (dBm/500kHz)	Verdict
			ANT0	ANT1	Total PSD		
11n (HT20)	CH149	5745	-7.07	-7.85	-4.43	30	Pass
11n (HT20)	CH157	5785	-7.36	-8.20	-4.75	30	Pass
11n (HT20)	CH165	5825	-7.82	-8.95	-5.34	30	Pass
11n (HT40)	CH151	5755	-11.15	-11.82	-8.46	30	Pass
11n (HT40)	CH159	5795	-11.88	-12.07	-8.96	30	Pass

## A.5 Conducted Emissions

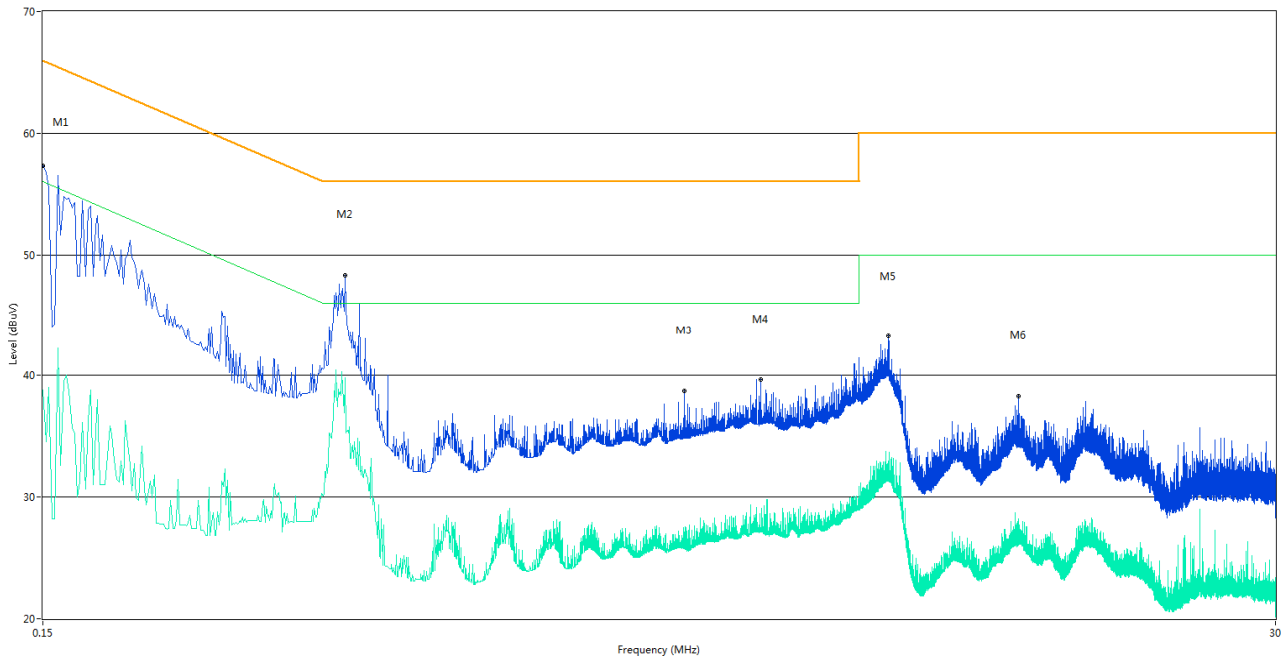
Note<sup>1</sup>: The EUT is working in the Normal link mode.

Note<sup>2</sup>: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 60 Hz and 240 VAC, 50 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

### Test Data and Plots

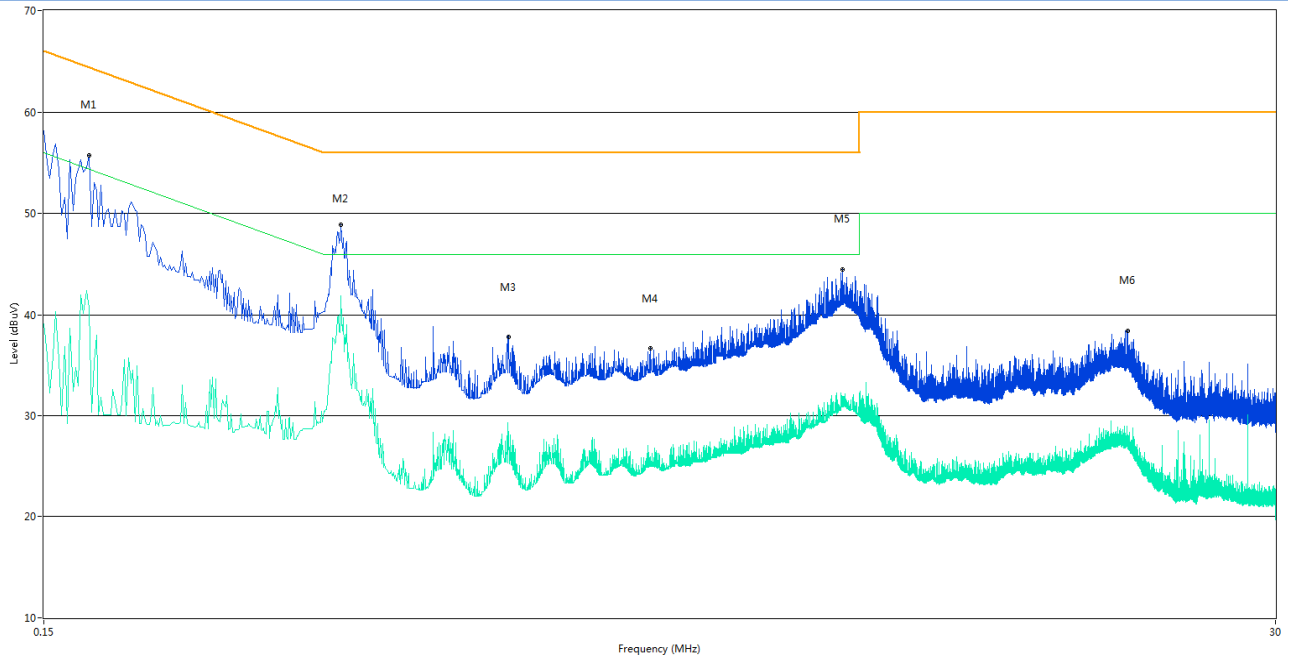
RJ-AS0505150U003-A

#### PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.150	57.3	9.70	66.0	8.70	Peak	L Line	Pass
1**	0.150	38.8	9.70	56.0	17.20	AV	L Line	Pass
2	0.550	48.3	9.47	56.0	7.70	Peak	L Line	Pass
2**	0.550	39.8	9.47	46.0	6.20	AV	L Line	Pass
3	2.368	38.8	10.46	56.0	17.20	Peak	L Line	Pass
3**	2.368	26.2	10.46	46.0	19.80	AV	L Line	Pass
4	3.278	39.7	10.40	56.0	16.30	Peak	L Line	Pass
4**	3.278	27.0	10.40	46.0	19.00	AV	L Line	Pass
5	5.684	43.3	9.92	60.0	16.70	Peak	L Line	Pass
5**	5.684	33.0	9.92	50.0	17.00	AV	L Line	Pass
6	9.944	38.3	10.36	60.0	21.70	Peak	L Line	Pass
6**	9.944	28.2	10.36	50.0	21.80	AV	L Line	Pass

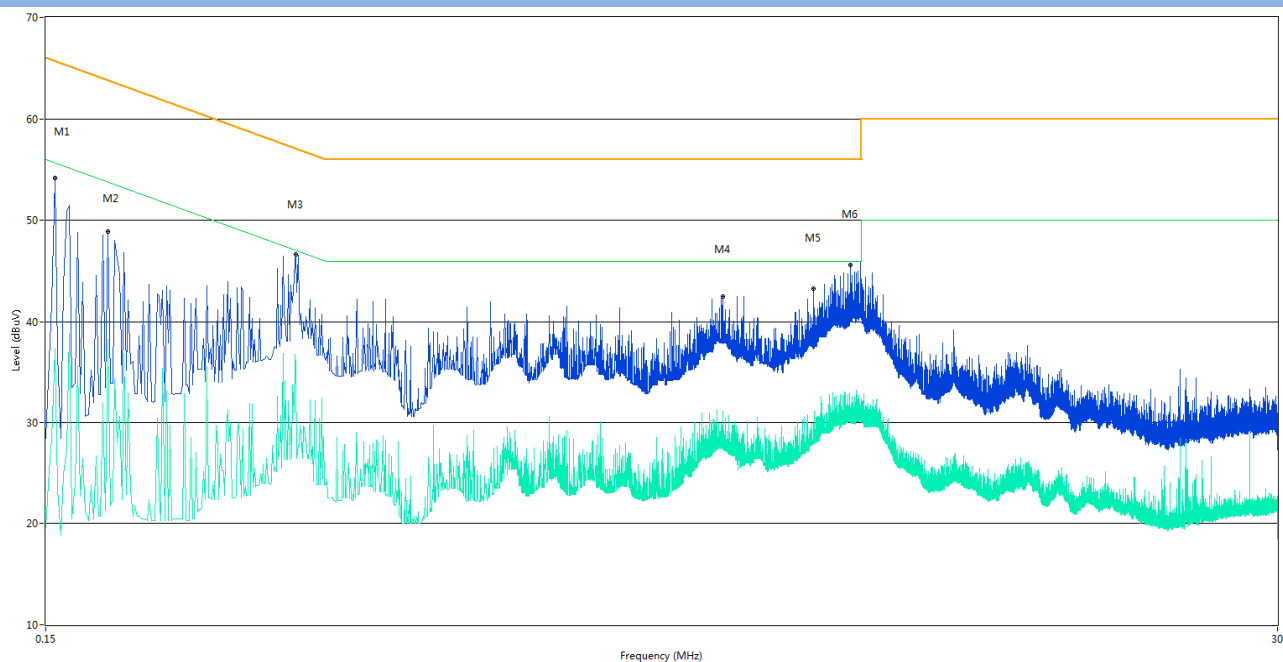
# PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.182	55.8	10.46	64.4	8.60	Peak	N Line	Pass
1**	0.182	40.7	10.46	54.4	13.70	AV	N Line	Pass
2	0.538	48.9	9.28	56.0	7.10	Peak	N Line	Pass
2**	0.538	41.9	9.28	46.0	4.10	AV	N Line	Pass
3	1.106	37.8	10.28	56.0	18.20	Peak	N Line	Pass
3**	1.106	27.8	10.28	46.0	18.20	AV	N Line	Pass
4	2.042	36.6	10.41	56.0	19.40	Peak	N Line	Pass
4**	2.042	24.6	10.41	46.0	21.40	AV	N Line	Pass
5	4.662	44.5	9.82	56.0	11.50	Peak	N Line	Pass
5**	4.662	30.8	9.82	46.0	15.20	AV	N Line	Pass
6	15.888	38.4	11.55	60.0	21.60	Peak	N Line	Pass
6**	15.888	27.6	11.55	50.0	22.40	AV	N Line	Pass

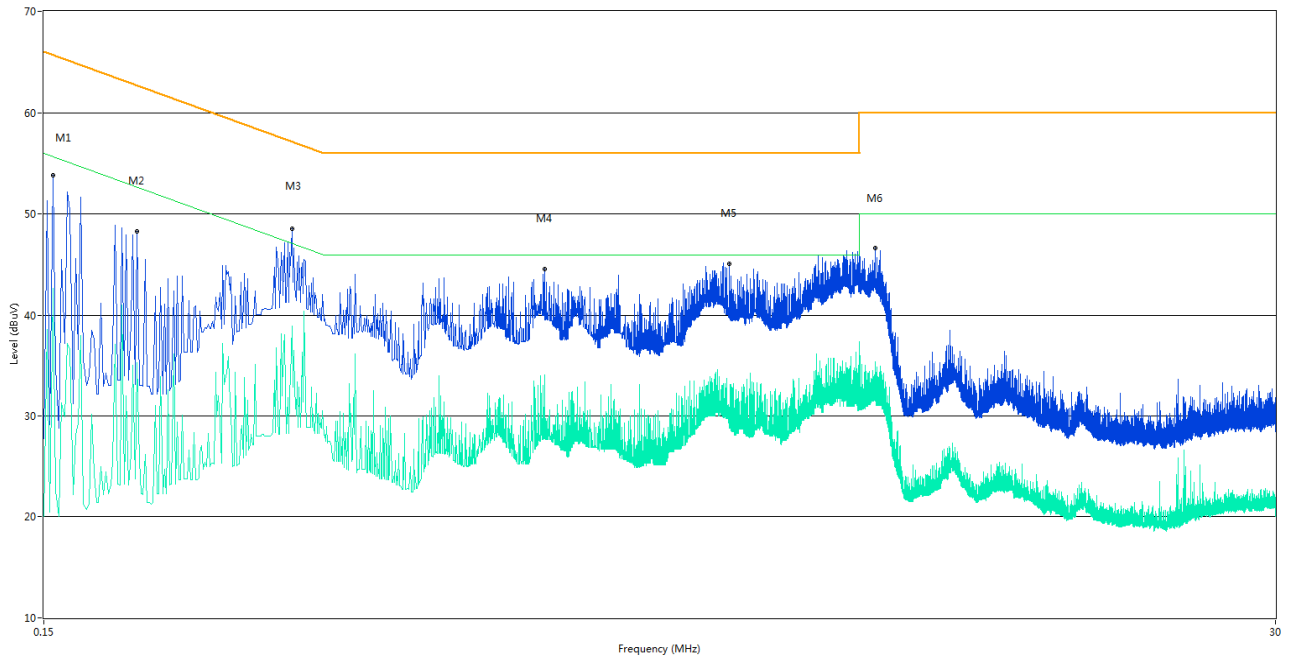
NBS12E050150VU

# PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.156	54.2	10.20	65.7	11.50	Peak	L Line	Pass
1**	0.156	37.3	10.20	55.7	18.40	AV	L Line	Pass
2	0.196	48.9	9.47	63.8	14.90	Peak	L Line	Pass
2**	0.196	38.2	9.47	53.8	15.60	AV	L Line	Pass
3	0.440	46.6	10.56	57.1	10.50	Peak	L Line	Pass
3**	0.440	35.6	10.56	47.1	11.50	AV	L Line	Pass
4	2.764	42.5	10.55	56.0	13.50	Peak	L Line	Pass
4**	2.764	31.1	10.55	46.0	14.90	AV	L Line	Pass
5	4.074	43.3	10.48	56.0	12.70	Peak	L Line	Pass
5**	4.074	29.6	10.48	46.0	16.40	AV	L Line	Pass
6	4.782	45.6	10.03	56.0	10.40	Peak	L Line	Pass
6**	4.782	30.0	10.03	46.0	16.00	AV	L Line	Pass

# PHASE N

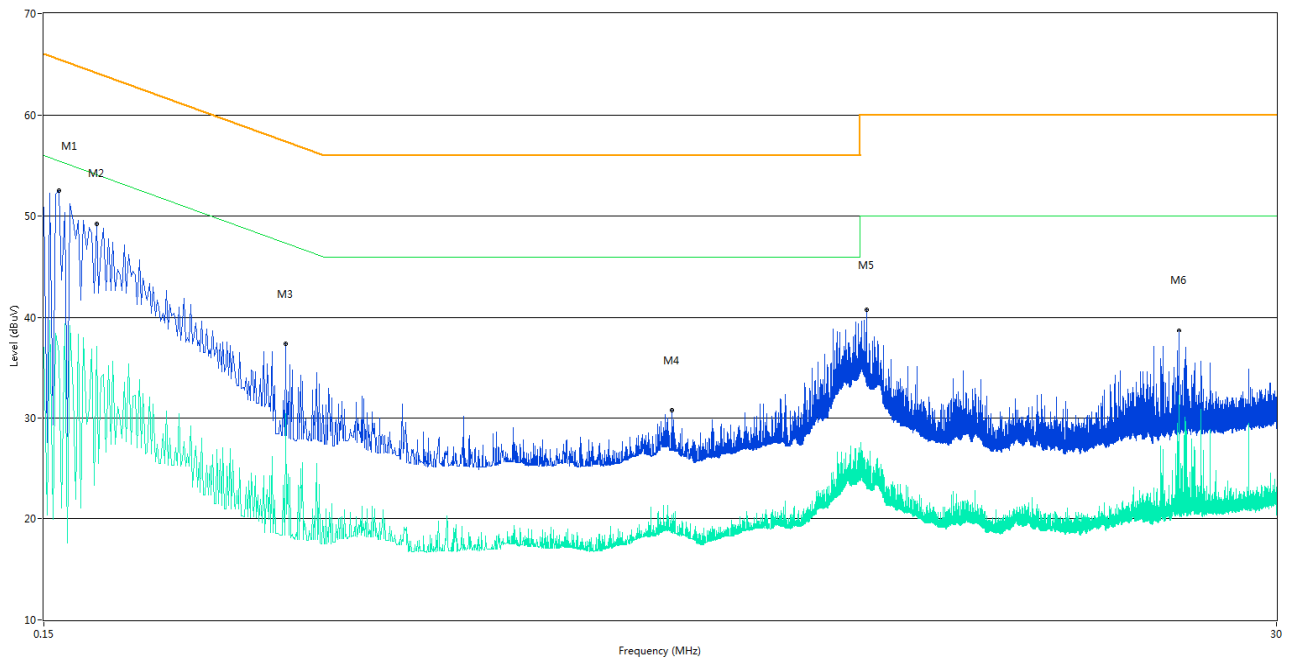


No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.156	53.8	10.20	65.7	11.90	Peak	N Line	Pass
1**	0.156	42.7	10.20	55.7	13.00	AV	N Line	Pass
2	0.224	48.3	10.30	62.7	14.40	Peak	N Line	Pass
2**	0.224	35.3	10.30	52.7	17.40	AV	N Line	Pass
3	0.436	48.6	10.62	57.1	8.50	Peak	N Line	Pass
3**	0.436	39.0	10.62	47.1	8.10	AV	N Line	Pass
4	1.292	44.6	10.55	56.0	11.40	Peak	N Line	Pass
4**	1.292	34.1	10.55	46.0	11.90	AV	N Line	Pass
5	2.866	45.1	10.50	56.0	10.90	Peak	N Line	Pass
5**	2.866	30.0	10.50	46.0	16.00	AV	N Line	Pass
6	5.362	46.7	10.24	60.0	13.30	Peak	N Line	Pass
6**	5.362	33.2	10.24	50.0	16.80	AV	N Line	Pass



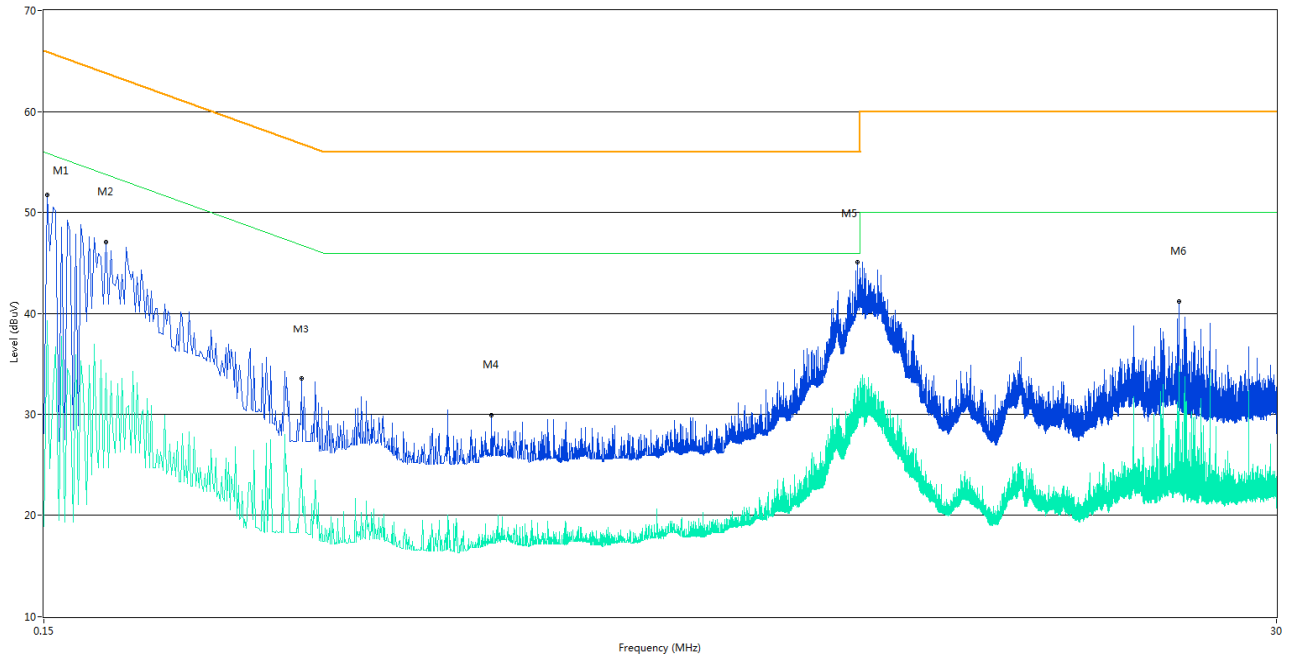
DSA-12PFU-05 FUS 050150

# PHASE L



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.160	52.5	10.29	65.5	13.00	Peak	L Line	Pass
1**	0.160	36.5	10.29	55.5	19.00	AV	L Line	Pass
2	0.188	49.3	9.49	64.1	14.80	Peak	L Line	Pass
2**	0.188	37.1	9.49	54.1	17.00	AV	L Line	Pass
3	0.424	37.3	8.51	57.4	20.10	Peak	L Line	Pass
3**	0.424	30.4	8.51	47.4	17.00	AV	L Line	Pass
4	2.232	30.7	10.64	56.0	25.30	Peak	L Line	Pass
4**	2.232	20.4	10.64	46.0	25.60	AV	L Line	Pass
5	5.146	40.8	9.76	60.0	19.20	Peak	L Line	Pass
5**	5.146	25.1	9.76	50.0	24.90	AV	L Line	Pass
6	19.706	38.7	10.88	60.0	21.30	Peak	L Line	Pass
6**	19.706	32.2	10.88	50.0	17.80	AV	L Line	Pass

# PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Margin (dB)	Detector	Line	Verdict
1	0.152	51.8	9.78	65.9	14.10	Peak	N Line	Pass
1**	0.152	39.3	9.78	55.9	16.60	AV	N Line	Pass
2	0.196	47.1	9.47	63.8	16.70	Peak	N Line	Pass
2**	0.196	34.0	9.47	53.8	19.80	AV	N Line	Pass
3	0.454	33.5	8.99	56.8	23.30	Peak	N Line	Pass
3**	0.454	24.6	8.99	46.8	22.20	AV	N Line	Pass
4	1.028	29.8	9.82	56.0	26.20	Peak	N Line	Pass
4**	1.028	17.7	9.82	46.0	28.30	AV	N Line	Pass
5	4.952	45.1	9.94	56.0	10.90	Peak	N Line	Pass
5**	4.952	31.5	9.94	46.0	14.50	AV	N Line	Pass
6	19.708	41.2	10.85	60.0	18.80	Peak	N Line	Pass
6**	19.708	34.8	10.85	50.0	15.20	AV	N Line	Pass

## A.6 Conducted Spurious Emission and Band Edge (Authorized-band)

Note 1: Test plots please refer to the document “Annex No.: BL-SZ1740210-602 Data Part 4.pdf”.

Note 2: The margin of all individual chains in the report is greater than 3 db, so the total value meets the limit requirement.

### ANTENNA 0

Test Band	Mode	Channel	Verdict
Band I	802.11a	Low	Pass
		Middle	Pass
		High	Pass
	802.11n(HT20)	Low	Pass
		Middle	Pass
		High	Pass
	802.11n(HT40)	Low	Pass
		High	Pass
	Band IV	802.11a	Low
Middle			Pass
High			Pass
802.11n(HT20)		Low	Pass
		Middle	Pass
		High	Pass
802.11n(HT40)		Low	Pass
		High	Pass

### ANTENNA 1

Test Band	Mode	Channel	Verdict
Band I	802.11a	Low	Pass
		Middle	Pass
		High	Pass
	802.11n(HT20)	Low	Pass
		Middle	Pass
		High	Pass
	802.11n(HT40)	Low	Pass
		High	Pass
	Band IV	802.11a	Low
Middle			Pass
High			Pass
802.11n(HT20)		Low	Pass
		Middle	Pass
		High	Pass
802.11n(HT40)		Low	Pass
		High	Pass

## A.7 Radiated Spurious Emissions and Band Edge (Restricted-band)

### Test Data

Note 1: The symbol of “--” in the table which means not application.

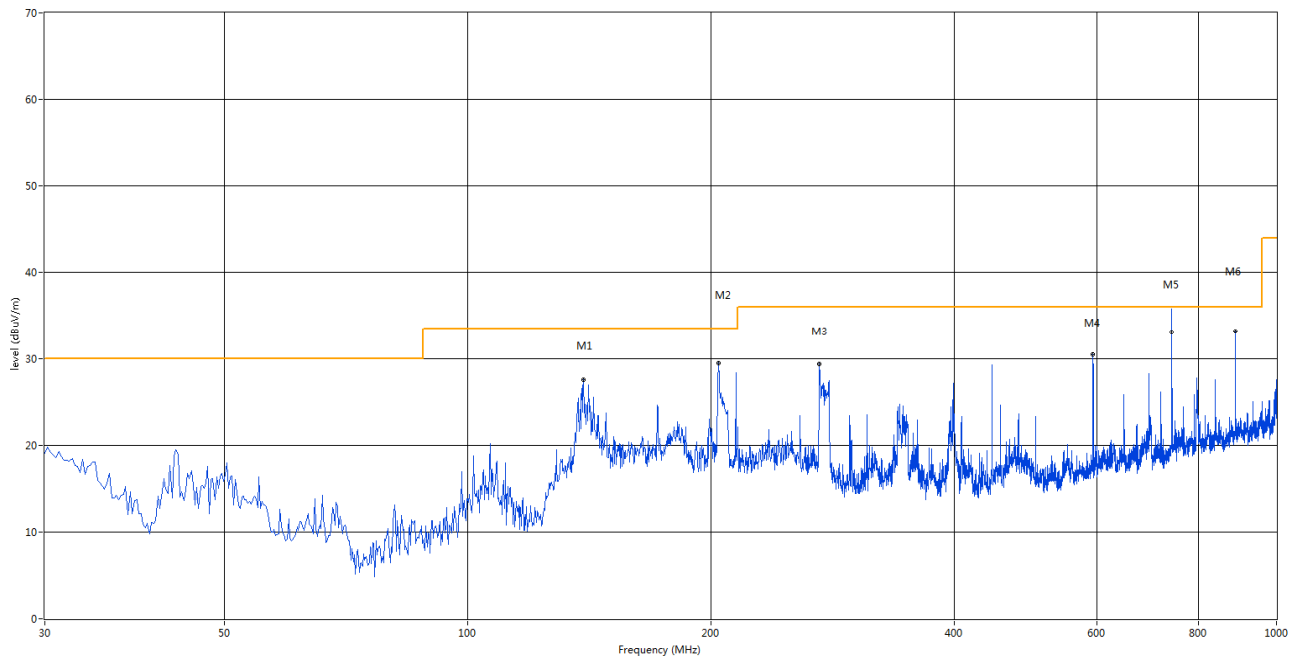
Note 2: For the test data above 1 GHz, According the ANSI C63.4, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note 3: The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

Note 4: The EUT is working in the Normal link mode below 1 GHz.

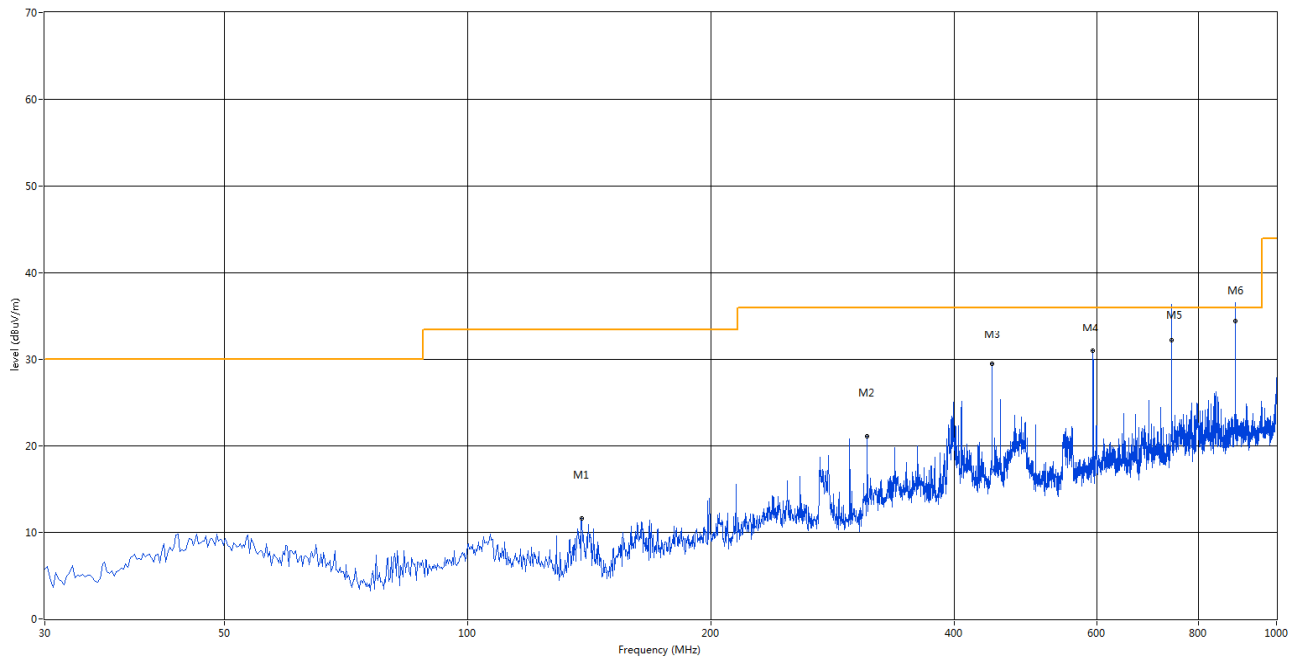
DSA-12PFU-05 FUS 050150

30 MHz to 1 GHz, ANT H



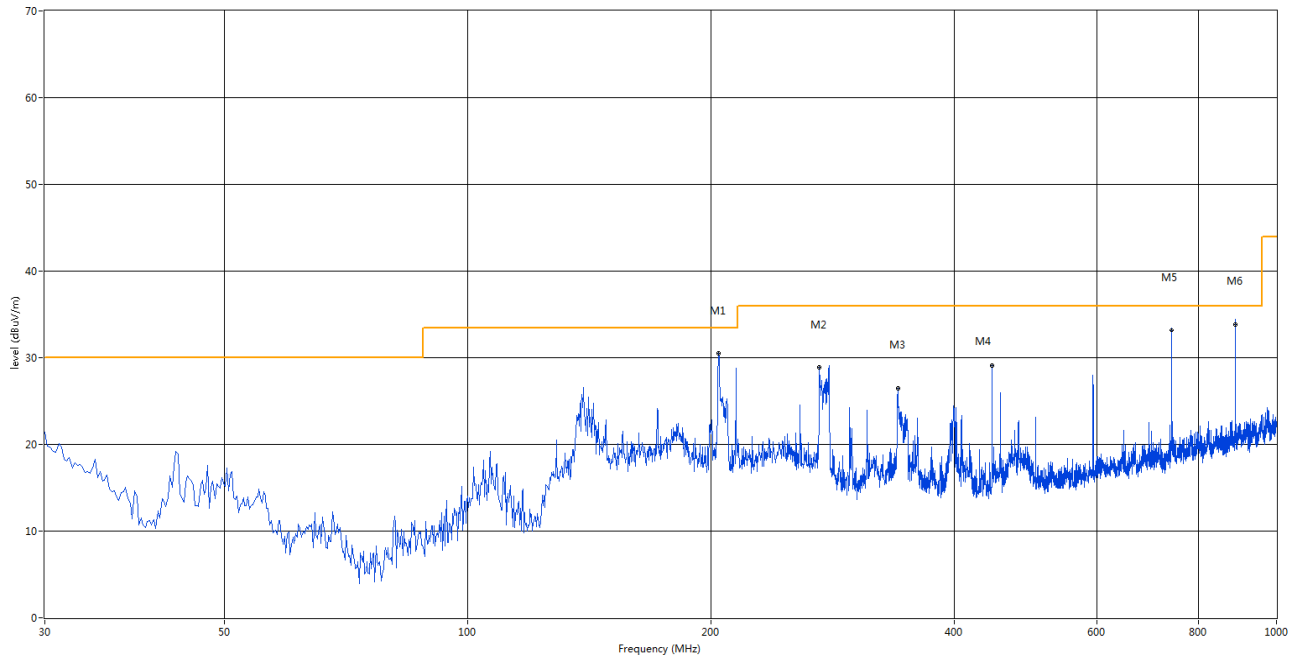
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	139.098	27.55	-18.82	33.5	5.95	Peak	59.00	100	Vertical	Pass
2	204.071	28.90	-14.92	33.5	4.60	Peak	213.00	300	Vertical	Pass
3	272.197	29.30	-13.06	36.0	6.70	Peak	172.00	100	Vertical	Pass
4	593.187	30.49	-5.64	36.0	5.51	Peak	35.00	128.00	Vertical	Pass
5	741.560	35.80	-3.16	36.0	0.20	Peak	131.00	128.00	Vertical	Pass
5*	741.560	33.04	-3.16	36.0	2.96	QP	131.00	130.00	Vertical	Pass
6	889.933	32.88	-1.30	36.0	3.12	Peak	350.00	130.00	Vertical	Pass

## 30 MHz to 1 GHz, ANT H



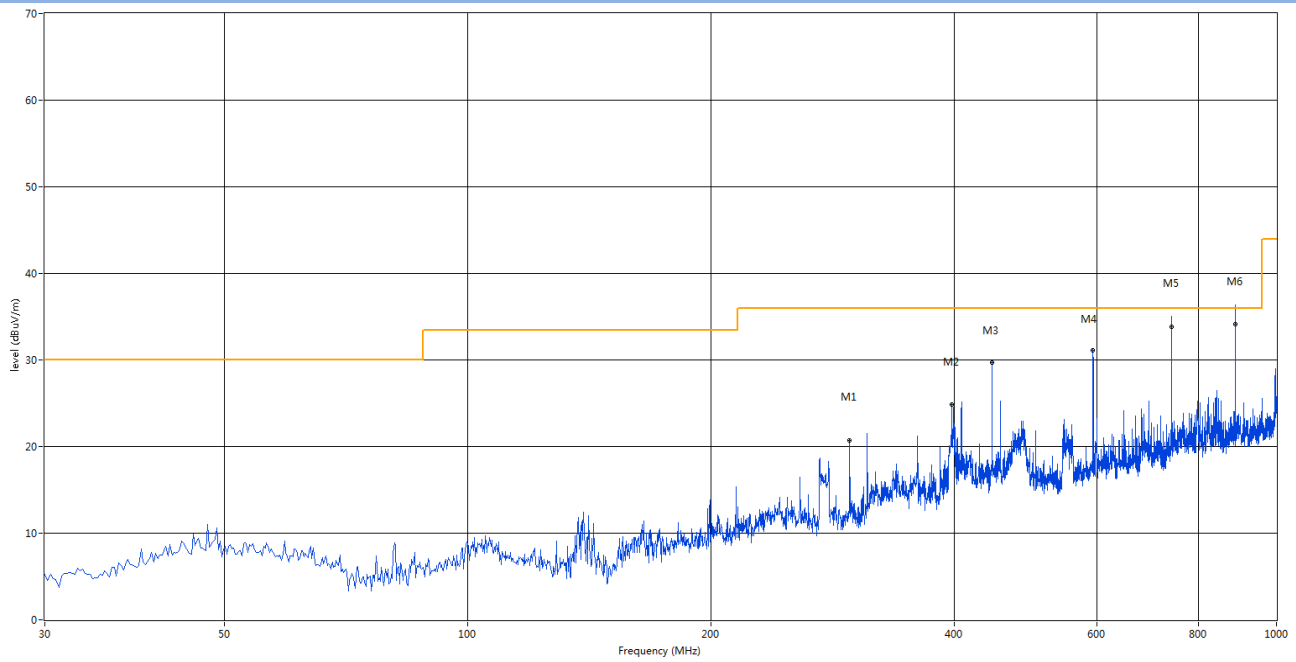
NBS12E050150VU

30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	204.071	30.46	-14.92	33.5	3.04	Peak	333.00	100	Vertical	Pass
2	272.197	28.83	-13.06	36.0	7.17	Peak	158.00	100	Vertical	Pass
3	340.322	26.47	-10.70	36.0	9.53	Peak	152.00	100	Vertical	Pass
4	444.814	29.01	-8.93	36.0	6.99	Peak	148.00	100	Vertical	Pass
5	741.560	33.50	-3.16	36.0	2.50	Peak	18.00	251.00	Vertical	Pass
5*	741.560	33.14	-3.16	36.0	2.86	QP	18.00	251.00	Vertical	Pass
6	889.933	34.50	-1.30	36.0	1.50	Peak	347.00	123.00	Vertical	Pass
6*	889.933	33.90	-1.30	36.0	2.10	QP	347.00	123.00	Vertical	Pass

## 30 MHz to 1 GHz, ANT H

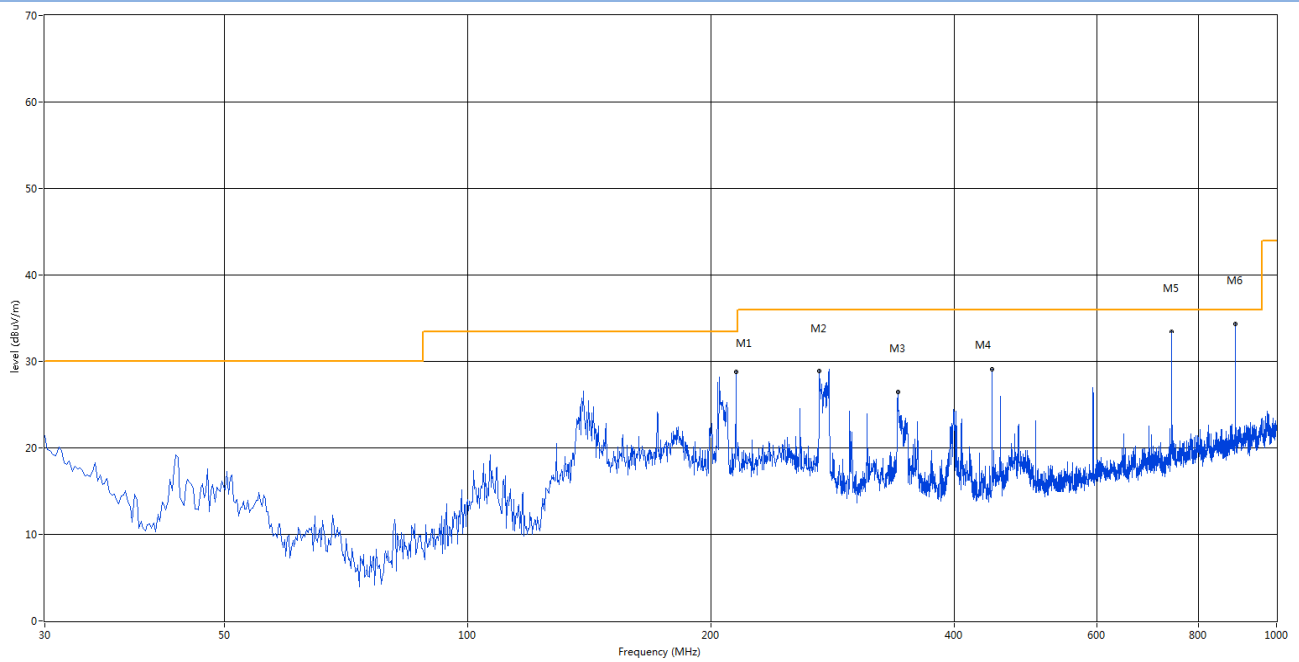


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	296.683	20.71	-12.47	36.0	15.29	Peak	318.00	100	Horizontal	Pass
2	396.811	24.80	-9.74	36.0	11.20	Peak	85.00	100	Horizontal	Pass
3	444.814	29.63	-8.93	36.0	6.37	Peak	273.00	100	Horizontal	Pass
4	593.187	31.06	-5.64	36.0	4.94	Peak	24.00	100	Horizontal	Pass
5	741.560	34.66	-3.16	36.0	1.34	Peak	137.00	123.00	Horizontal	Pass
5*	741.560	33.94	-3.16	36.0	2.06	QP	137.00	123.00	Horizontal	Pass
6	889.933	36.39	-1.30	36.0	-0.39	Peak	20.00	181.00	Horizontal	Pass
6*	889.933	34.20	-1.30	36.0	1.80	QP	20.00	181.00	Horizontal	Pass



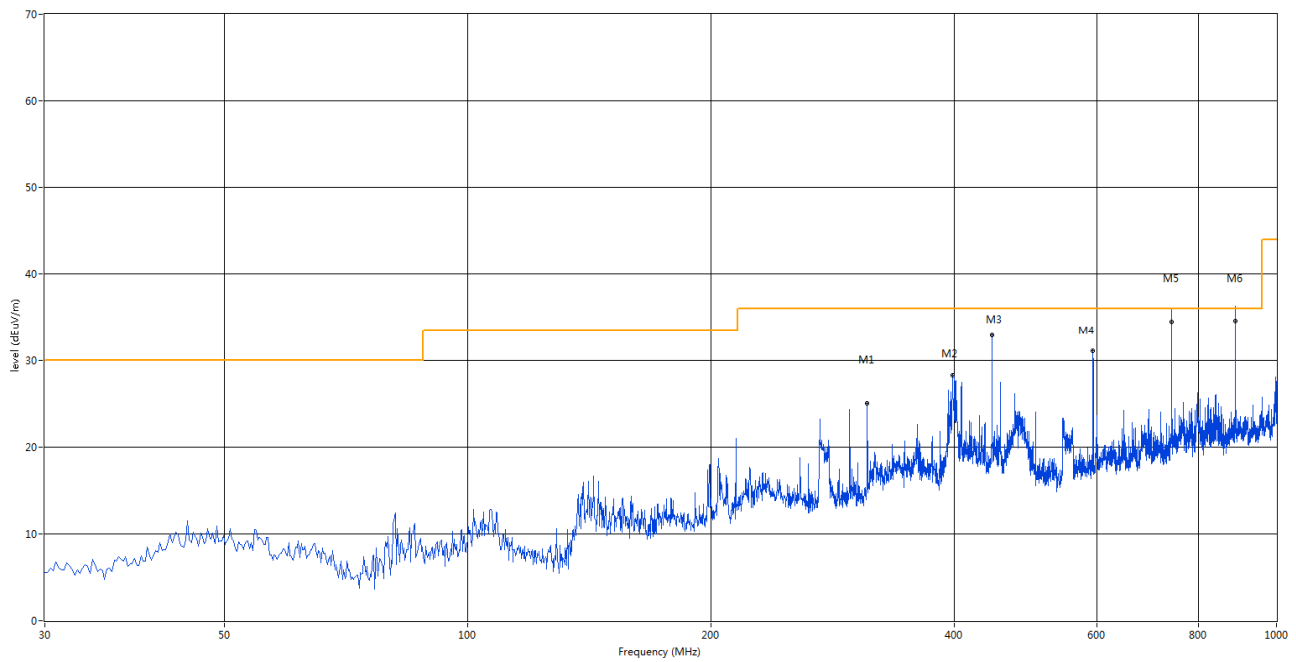
RJ-AS0505150U003-A

30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	214.739	28.76	-15.06	33.5	4.74	Peak	215.00	100	Vertical	Pass
2	272.197	28.83	-13.06	36.0	7.17	Peak	158.00	200	Vertical	Pass
3	340.322	26.47	-10.70	36.0	9.53	Peak	152.00	200	Vertical	Pass
4	444.814	29.01	-8.93	36.0	6.99	Peak	148.00	100	Vertical	Pass
5	741.560	31.50	-3.16	36.0	4.50	Peak	360.00	100	Vertical	Pass
6	889.933	34.50	-1.30	36.0	1.50	Peak	6.00	262.00	Vertical	Pass
6*	889.933	34.36	-1.30	36.0	1.64	QP	6.00	262.00	Vertical	Pass

## 30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	311.957	25.05	-12.07	36.0	10.95	Peak	301.00	200	Horizontal	Pass
2	397.538	28.21	-9.75	36.0	7.79	Peak	300.00	200	Horizontal	Pass
3	444.814	30.84	-8.93	36.0	5.16	Peak	230.00	100	Horizontal	Pass
4	593.187	30.57	-5.64	36.0	5.43	Peak	180.00	100	Horizontal	Pass
5	741.560	35.54	-3.16	36.0	0.46	Peak	360.00	138.00	Horizontal	Pass
5*	741.560	34.54	-3.16	36.0	1.46	QP	360.00	138.00	Horizontal	Pass
6	889.933	36.28	-1.30	36.0	-0.28	Peak	360.00	283.00	Horizontal	Pass
6*	889.933	34.60	-1.30	36.0	1.40	QP	360.00	283.00	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V Band I 802.11a Low Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2491.82	50.23	-3.44	68.2	17.98	Peak	160.7	150	Vertical	PASS
2	4989.05	51.15	9.30	68.2	17.05	Peak	18.3	150	Vertical	PASS
3	5180.73	103.63	9.82	68.2	-35.43	Peak	111.4	150	Vertical	N/A
4	7031.64	43.56	12.91	68.2	24.64	Peak	175.5	150	Vertical	PASS
5	13231.50	49.43	18.72	68.2	18.77	Peak	337.9	150	Vertical	PASS
6	15296.75	50.87	25.51	68.2	17.34	Peak	30.6	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band I 802.11a Low Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2492.08	55.80	-3.29	68.2	12.40	Peak	149.8	150	Horizontal	PASS
1**	2492.08	42.97	-3.29	54.0	11.03	AV	149.8	150	Horizontal	PASS
2	5001.54	52.40	9.22	68.2	15.80	Peak	218.2	150	Horizontal	PASS
3	5180.29	105.01	9.77	68.2	-36.81	Peak	311	150	Horizontal	N/A
4	7026.94	44.26	12.92	68.2	23.94	Peak	344.3	150	Horizontal	PASS
5	14383.75	45.18	21.07	68.2	23.02	Peak	278.5	150	Horizontal	PASS
6	16523.25	52.89	21.93	68.2	15.31	Peak	267.1	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band I 802.11a Middle Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2491.71	50.63	-3.43	68.2	17.58	Peak	132	150	Vertical	PASS
2	4987.51	51.56	9.38	68.2	16.64	Peak	292.4	150	Vertical	PASS
3	5220.68	100.00	9.71	68.2	-31.80	Peak	162.8	150	Vertical	N/A
4	7026.20	43.94	12.92	68.2	24.26	Peak	20.2	150	Vertical	PASS
5	11413.75	44.07	19.78	68.2	24.13	Peak	146.4	150	Vertical	PASS
6	17961.50	53.85	25.80	68.2	14.35	Peak	42.6	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band I 802.11a Middle Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2491.41	55.56	-3.43	68.2	12.64	Peak	72.7	150	Horizontal	PASS
1**	2491.41	43.66	-3.43	54.0	10.34	AV	72.7	150	Horizontal	PASS
2	4999.85	52.66	9.22	68.2	15.54	Peak	332.7	150	Horizontal	PASS
3	5220.45	103.16	9.88	68.2	-34.96	Peak	94.2	150	Horizontal	N/A
4	7015.91	44.16	12.92	68.2	24.04	Peak	215.5	150	Horizontal	PASS
5	9882.00	41.66	13.89	68.2	26.54	Peak	127.4	150	Horizontal	PASS
6	11732.75	47.63	16.79	68.2	20.57	Peak	127	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band I 802.11a High Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2489.62	49.51	-3.45	68.2	18.70	Peak	161.5	150	Vertical	PASS
2	4990.53	51.40	9.35	68.2	16.80	Peak	326.1	150	Vertical	PASS
3	5240.53	102.43	9.88	68.2	-34.23	Peak	14.3	150	Vertical	N/A
4	7028.88	44.50	12.96	68.2	23.70	Peak	16	150	Vertical	PASS
5	14339.75	46.67	20.21	68.2	21.53	Peak	195.3	150	Vertical	PASS
6	16039.25	52.64	28.32	68.2	15.56	Peak	108.9	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band I 802.11a High Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2490.01	56.30	-3.45	68.2	11.90	Peak	23.9	150	Horizontal	PASS
1**	2490.01	43.34	-3.45	54.0	10.66	AV	23.9	150	Horizontal	PASS
2	5001.45	53.45	9.42	68.2	14.75	Peak	104.5	150	Horizontal	PASS
3	5240.74	104.42	9.82	68.2	-36.22	Peak	227.6	150	Horizontal	N/A
4	7017.49	44.92	12.67	68.2	23.28	Peak	227.6	150	Horizontal	PASS
5	9354.00	43.12	14.89	68.2	25.08	Peak	91.7	150	Horizontal	PASS
6	10346.75	45.00	16.20	68.2	23.20	Peak	137.8	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band I 802.11n20 Low Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2498.91	50.16	-3.10	68.2	18.04	Peak	322.3	150	Vertical	PASS
2	4980.35	52.39	9.52	68.2	15.81	Peak	341.9	150	Vertical	PASS
3	5180.85	100.93	9.68	68.2	-32.73	Peak	14.7	150	Vertical	N/A
4	7025.83	44.09	12.92	68.2	24.11	Peak	279.9	150	Vertical	PASS
5	14007.00	49.58	21.22	68.2	18.62	Peak	176.9	150	Vertical	PASS
6	17813.00	51.81	21.21	68.2	16.39	Peak	228	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band I 802.11n20 Low Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2390.64	58.62	-3.04	68.2	9.59	Peak	174	150	Horizontal	PASS
1**	2390.64	36.75	-3.04	54.0	17.25	AV	174	150	Horizontal	PASS
2	4996.06	50.22	9.46	68.2	17.98	Peak	242	150	Horizontal	PASS
3	5180.54	106.34	9.67	68.2	-38.14	Peak	94	150	Horizontal	N/A
4	7009.60	44.03	12.75	68.2	24.17	Peak	39.5	150	Horizontal	PASS
5	12153.50	49.79	18.14	68.2	18.42	Peak	251.9	150	Horizontal	PASS
6	16234.50	53.18	22.15	68.2	15.02	Peak	291.3	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band I 802.11n20 Middle Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2498.80	49.25	-3.26	68.2	18.95	Peak	319	150	Vertical	PASS
2	4980.73	52.13	9.52	68.2	16.07	Peak	37.2	150	Vertical	PASS
3	5220.39	102.54	9.77	68.2	-34.34	Peak	15.4	150	Vertical	N/A
4	7023.47	43.82	12.96	68.2	24.38	Peak	91.5	150	Vertical	PASS
5	13982.25	44.39	16.58	68.2	23.81	Peak	304	150	Vertical	PASS
6	17114.50	50.32	26.92	68.2	17.88	Peak	196.8	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band I 802.11n20 Middle Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2390.18	58.33	-3.05	68.2	9.88	Peak	161.5	150	Horizontal	PASS
1**	2390.18	36.12	-3.05	54.0	17.88	AV	161.5	150	Horizontal	PASS
2	4999.98	50.66	9.25	68.2	17.54	Peak	275.2	150	Horizontal	PASS
3	5220.56	106.53	9.67	68.2	-38.33	Peak	300.7	150	Horizontal	N/A
4	7004.51	44.84	12.68	68.2	23.36	Peak	210.5	150	Horizontal	PASS
5	8804.00	42.15	14.47	68.2	26.05	Peak	181.5	150	Horizontal	PASS
6	11224.00	45.71	15.31	68.2	22.49	Peak	224.7	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band I 802.11n20 High Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2501.75	50.98	-3.32	68.2	17.22	Peak	256.8	150	Vertical	PASS
2	4981.59	52.85	9.52	68.2	15.35	Peak	15.9	150	Vertical	PASS
3	5240.04	101.71	9.72	68.2	-33.51	Peak	304.1	150	Vertical	N/A
4	7020.16	43.01	12.96	68.2	25.19	Peak	301.6	150	Vertical	PASS
5	11108.50	45.04	18.83	68.2	23.16	Peak	333.7	150	Vertical	PASS
6	17441.75	52.31	25.32	68.2	15.89	Peak	57.1	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band I 802.11n20 High Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2390.92	58.55	-3.01	68.2	9.66	Peak	223.3	150	Horizontal	PASS
1**	2390.92	36.67	-3.01	54.0	17.33	AV	223.3	150	Horizontal	PASS
2	4997.59	51.08	9.22	68.2	17.12	Peak	199.8	150	Horizontal	PASS
3	5240.23	106.30	9.70	68.2	-38.10	Peak	44.5	150	Horizontal	N/A
4	7012.86	44.29	12.63	68.2	23.91	Peak	42.4	150	Horizontal	PASS
5	9568.50	44.20	14.29	68.2	24.00	Peak	224.3	150	Horizontal	PASS
6	11226.75	41.97	16.02	68.2	26.23	Peak	31.1	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band I 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2492.08	50.11	-3.41	68.2	18.09	Peak	100.8	150	Vertical	PASS
2	4986.96	52.38	9.45	68.2	15.82	Peak	174.3	150	Vertical	PASS
3	5190.96	100.49	9.57	68.2	-32.29	Peak	229.1	150	Vertical	N/A
4	7004.06	43.95	12.65	68.2	24.25	Peak	175.3	150	Vertical	PASS
5	9051.50	43.26	16.23	68.2	24.94	Peak	243.4	150	Vertical	PASS
6	10324.75	45.15	16.85	68.2	23.05	Peak	222.5	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band I 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2493.36	55.13	-3.29	68.2	13.08	Peak	357.6	150	Horizontal	PASS
1**	2493.36	36.48	-3.29	54.0	17.52	AV	357.6	150	Horizontal	PASS
2	4996.26	52.54	9.35	68.2	15.66	Peak	94.8	150	Horizontal	PASS
3	5190.66	104.60	9.70	68.2	-36.40	Peak	42.6	150	Horizontal	N/A
4	7029.74	44.86	12.91	68.2	23.34	Peak	174	150	Horizontal	PASS
5	9002.00	44.61	14.41	68.2	23.59	Peak	42.6	150	Horizontal	PASS
6	11584.25	42.33	16.20	68.2	25.88	Peak	252.4	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band I 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2493.95	50.54	-3.44	68.2	17.66	Peak	344.9	150	Vertical	PASS
2	4988.49	52.14	9.35	68.2	16.06	Peak	109.1	150	Vertical	PASS
3	5230.87	100.04	9.79	68.2	-31.84	Peak	6.4	150	Vertical	N/A
4	7011.21	43.49	12.75	68.2	24.71	Peak	356.7	150	Vertical	PASS
5	9142.25	42.25	14.33	68.2	25.95	Peak	4.9	150	Vertical	PASS
6	10283.50	45.56	17.29	68.2	22.64	Peak	197.6	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT V Band I 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2490.53	56.63	-3.44	68.2	11.58	Peak	277	150	Horizontal	PASS
1**	2490.53	35.88	-3.44	54.0	18.12	AV	277	150	Horizontal	PASS
2	4994.15	52.05	9.35	68.2	16.15	Peak	211.3	150	Horizontal	PASS
3	5230.05	104.20	9.60	68.2	-36.00	Peak	209.8	150	Horizontal	N/A
4	7033.32	45.09	12.96	68.2	23.11	Peak	260.1	150	Horizontal	PASS
5	9208.25	45.23	16.35	68.2	22.97	Peak	158.3	150	Horizontal	PASS
6	10319.25	44.20	16.64	68.2	24.00	Peak	347.1	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band IV 802.11a Low Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2490.66	50.49	-3.36	68.2	17.71	Peak	300.4	150	Vertical	PASS
2	4994.64	52.15	9.27	68.2	16.05	Peak	307.5	150	Vertical	PASS
3	5746.00	99.25	10.62	68.2	-31.05	Peak	159	150	Vertical	N/A
4	7006.82	42.95	12.68	68.2	25.25	Peak	77.5	150	Vertical	PASS
5	13712.75	48.22	19.82	68.2	19.98	Peak	21.4	150	Vertical	PASS
6	15679.00	51.95	25.07	68.2	16.25	Peak	353.1	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band IV 802.11a Low Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2494.10	56.27	-3.22	68.2	11.93	Peak	310.3	150	Horizontal	PASS
1**	2494.10	42.16	-3.22	54.0	11.84	AV	310.3	150	Horizontal	PASS
2	4989.80	51.72	9.30	68.2	16.48	Peak	165.9	150	Horizontal	PASS
3	5745.06	103.98	10.35	68.2	-35.78	Peak	158.4	150	Horizontal	N/A
4	7031.38	44.60	12.90	68.2	23.60	Peak	107.6	150	Horizontal	PASS
5	12681.50	47.74	20.84	68.2	20.46	Peak	66.1	150	Horizontal	PASS
6	17505.00	52.38	25.07	68.2	15.82	Peak	212.1	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band IV 802.11a Middle Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2489.01	49.87	-3.29	68.2	18.33	Peak	190.2	150	Vertical	PASS
2	4991.63	52.69	9.27	68.2	15.51	Peak	298.8	150	Vertical	PASS
3	5785.57	100.37	10.42	68.2	-32.17	Peak	300.7	150	Vertical	N/A
4	7006.68	43.73	12.75	68.2	24.47	Peak	73.7	150	Vertical	PASS
5	11295.50	47.45	17.38	68.2	20.75	Peak	109.2	150	Vertical	PASS
6	16636.00	49.57	21.95	68.2	18.63	Peak	136.6	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band IV 802.11a Middle Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2495.17	55.21	-3.31	68.2	12.99	Peak	333.8	150	Horizontal	PASS
1**	2495.17	49.31	-3.31	54.0	4.89	AV	333.8	150	Horizontal	PASS
2	4986.15	50.09	9.41	68.2	18.11	Peak	88.5	150	Horizontal	PASS
3	5785.77	103.06	10.18	68.2	-34.86	Peak	1.4	150	Horizontal	N/A
4	7029.07	43.68	12.96	68.2	24.52	Peak	221.3	150	Horizontal	PASS
5	8727.00	45.19	14.68	68.2	23.01	Peak	43.1	150	Horizontal	PASS
6	11059.00	45.30	16.18	68.2	22.91	Peak	115	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band IV 802.11a High Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2490.27	50.62	-3.29	68.2	17.58	Peak	237.2	150	Vertical	PASS
2	4995.66	51.28	9.27	68.2	16.92	Peak	173.3	150	Vertical	PASS
3	5825.89	99.22	10.50	68.2	-31.02	Peak	159.6	150	Vertical	N/A
4	7011.25	42.80	12.75	68.2	25.40	Peak	333	150	Vertical	PASS
5	11213.00	49.58	17.44	68.2	18.62	Peak	133.2	150	Vertical	PASS
6	15885.25	50.43	22.04	68.2	17.77	Peak	169.7	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band IV 802.11a High Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2496.33	55.20	-3.25	68.2	13.00	Peak	90.9	150	Horizontal	PASS
1**	2496.33	38.82	-3.25	54.0	15.18	AV	90.9	150	Horizontal	PASS
2	4989.28	50.44	9.41	68.2	17.76	Peak	176.6	150	Horizontal	PASS
3	5825.91	102.94	10.15	68.2	-34.74	Peak	336.4	150	Horizontal	N/A
4	7037.09	44.97	12.91	68.2	23.23	Peak	190.3	150	Horizontal	PASS
5	9502.50	44.78	13.82	68.2	23.42	Peak	343.7	150	Horizontal	PASS
6	11842.75	43.93	15.30	68.2	24.27	Peak	227	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band IV 802.11n20 Low Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2495.09	50.77	-3.44	68.2	17.43	Peak	330.7	150	Vertical	PASS
2	4992.79	50.96	9.35	68.2	17.24	Peak	303.7	150	Vertical	PASS
3	5745.63	102.23	10.32	68.2	-34.03	Peak	222.6	150	Vertical	N/A
4	7028.65	43.38	12.96	68.2	24.82	Peak	292.7	150	Vertical	PASS
5	14202.25	47.86	17.38	68.2	20.34	Peak	284.3	150	Vertical	PASS
6	15530.50	50.23	22.34	68.2	17.97	Peak	100.8	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band IV 802.11n20 Low Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2491.19	56.15	-3.29	68.2	12.06	Peak	295.1	150	Horizontal	PASS
1**	2491.19	43.60	-3.29	54.0	10.40	AV	295.1	150	Horizontal	PASS
2	4992.39	51.02	9.47	68.2	17.18	Peak	204.1	150	Horizontal	PASS
3	5745.57	104.22	10.12	68.2	-36.02	Peak	120.6	150	Horizontal	N/A
4	6999.78	44.21	12.68	68.2	24.00	Peak	224.2	150	Horizontal	PASS
5	13946.50	50.68	17.90	68.2	17.52	Peak	142.7	150	Horizontal	PASS
6	15307.75	53.09	19.30	68.2	15.11	Peak	95.1	150	Horizontal	PASS



## 1 GHz to 18 GHz, ANT V Band IV 802.11n20 Middle Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2492.68	50.41	-3.31	68.2	17.79	Peak	164.4	150	Vertical	PASS
2	4994.19	51.75	9.35	68.2	16.45	Peak	352.3	150	Vertical	PASS
3	5785.94	100.70	10.50	68.2	-32.50	Peak	36.1	150	Vertical	N/A
4	7039.90	43.12	12.81	68.2	25.08	Peak	340.2	150	Vertical	PASS
5	12728.25	45.54	18.03	68.2	22.67	Peak	213.5	150	Vertical	PASS
6	17593.00	50.86	23.55	68.2	17.34	Peak	144	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band IV 802.11n20 Middle Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2489.54	55.27	-3.51	68.2	12.94	Peak	260.7	150	Horizontal	PASS
1**	2489.54	36.46	-3.51	54.0	17.54	AV	260.7	150	Horizontal	PASS
2	4991.98	50.37	9.39	68.2	17.83	Peak	306.8	150	Horizontal	PASS
3	5785.04	103.41	10.18	68.2	-35.21	Peak	31.3	150	Horizontal	N/A
4	7005.45	44.38	12.67	68.2	23.83	Peak	241.8	150	Horizontal	PASS
5	9139.50	43.50	16.05	68.2	24.70	Peak	25.6	150	Horizontal	PASS
6	10687.75	43.54	15.05	68.2	24.66	Peak	230	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band IV 802.11n20 High Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2495.60	50.05	-3.41	68.2	17.15	Peak	217.8	150	Vertical	PASS
2	4988.77	51.59	9.30	68.2	16.61	Peak	43	150	Vertical	PASS
3	5825.30	102.22	10.63	68.2	-34.02	Peak	137.4	150	Vertical	N/A
4	7032.00	43.47	12.84	68.2	24.73	Peak	165.6	150	Vertical	PASS
5	12995.00	48.13	20.07	68.2	20.07	Peak	201.5	150	Vertical	PASS
6	15978.75	50.67	28.12	68.2	17.54	Peak	30.9	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band IV 802.11n20 High Channel

No	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2490.25	56.23	-3.41	68.2	11.98	Peak	172	150	Horizontal	PASS
1**	2490.25	36.24	-3.41	54.0	17.76	AV	172	150	Horizontal	PASS
2	4994.61	51.89	9.39	68.2	16.31	Peak	31.6	150	Horizontal	PASS
3	5825.00	103.13	10.28	68.2	-34.93	Peak	315	150	Horizontal	N/A
4	7141.21	42.60	12.75	68.2	25.61	Peak	138.6	150	Horizontal	PASS
5	9967.25	41.50	14.36	68.2	26.70	Peak	330.5	150	Horizontal	PASS
6	10946.25	44.85	16.18	68.2	23.35	Peak	98.3	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band IV 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2491.10	50.23	-3.51	68.2	17.97	Peak	90.6	150	Vertical	PASS
2	4989.00	51.67	9.47	68.2	16.53	Peak	264.9	150	Vertical	PASS
3	5755.40	99.26	9.91	68.2	-31.06	Peak	25	150	Vertical	N/A
4	7006.26	43.77	12.67	68.2	24.43	Peak	209.9	150	Vertical	PASS
5	8611.50	44.63	15.87	68.2	23.57	Peak	342.6	150	Vertical	PASS
6	11111.25	45.44	16.97	68.2	22.76	Peak	178.4	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT H Band IV 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2492.04	56.76	-3.25	68.2	11.44	Peak	291.5	150	Horizontal	PASS
1**	2492.04	44.20	-3.25	54.0	9.80	AV	291.5	150	Horizontal	PASS
2	4985.08	50.60	9.30	68.2	17.60	Peak	280.9	150	Horizontal	PASS
3	5755.97	100.59	10.70	68.2	-32.39	Peak	286	150	Horizontal	N/A
4	7014.38	43.69	12.75	68.2	24.51	Peak	129.5	150	Horizontal	PASS
5	8837.00	44.34	14.50	68.2	23.86	Peak	301.4	150	Horizontal	PASS
6	11556.75	45.16	15.80	68.2	23.04	Peak	249.5	150	Horizontal	PASS

## 1 GHz to 18 GHz, ANT V Band IV 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2491.79	50.82	-3.45	68.2	17.38	Peak	349.4	150	Vertical	PASS
2	4988.94	51.35	9.45	68.2	16.85	Peak	149.3	150	Vertical	PASS
3	5795.17	96.11	10.08	68.2	-27.91	Peak	316.6	150	Vertical	N/A
4	7022.49	43.45	12.66	68.2	24.75	Peak	351.3	150	Vertical	PASS
5	8575.75	41.83	16.56	68.2	26.38	Peak	208.5	150	Vertical	PASS
6	10085.50	44.56	14.88	68.2	23.64	Peak	217.6	150	Vertical	PASS

## 1 GHz to 18 GHz, ANT V Band IV 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2491.51	56.50	-3.41	68.2	11.70	Peak	59	150	Horizontal	PASS
1**	2491.51	35.57	-3.41	54.0	18.43	AV	59	150	Horizontal	PASS
2	4984.53	49.87	9.59	68.2	18.33	Peak	239.1	150	Horizontal	PASS
3	5795.62	99.43	10.67	68.2	-31.23	Peak	48.8	150	Horizontal	N/A
4	7004.96	43.16	12.75	68.2	25.04	Peak	330.3	150	Horizontal	PASS
5	8597.75	43.36	14.06	68.2	24.84	Peak	270.3	150	Horizontal	PASS
6	10671.25	42.18	15.97	68.2	26.02	Peak	80	150	Horizontal	PASS

Test Frequency: 18 GHz ~ 40 GHz

Note: Only noise floor was seen above 18 GHz and not reported.

### A.7.2 Band Edge (Restricted-band)

Note: Test plots please refer to the document “Annex No.: BL-SZ1740210-602 Data Part 5.pdf”.

Test Band	Mode	Channel	Verdict
Band I	802.11a	Low	Pass
		High	Pass
	802.11n(HT20)	Low	Pass
		High	Pass
	802.11n(HT40)	Low	Pass
		High	Pass
Band IV	802.11a	Low	Pass
		High	Pass
	802.11n(HT20)	Low	Pass
		High	Pass
	802.11n(HT40)	Low	Pass
		High	Pass

## A.8 Frequency Stability

Measurement Data (the worst channel)

ANT 0

Voltage vs. Frequency Stability (5320 MHz)

Test Conditions		Test Frequency (MHz)	0 Minute		2 Minute		5 Minute		10Minute	
TEMP. (°C)	Voltage (VDC)		Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)
20	4.5	5320	5319.9629 57	-6.96	5319.999 592	-0.08	5319.962 525	-7.04	5319.993 472	-1.23
	5.0	5320	5320.0199 37	3.75	5320.024 622	4.63	5320.000 818	0.15	5320.038 066	7.16
	5.5	5320	5320.0050 84	0.96	5320.021 253	3.99	5320.024 877	4.68	5320.013 155	2.47

Temperature vs. Frequency Stability (5320 MHz)

Test Conditions		Test Frequency (MHz)	0 Minute		2 Minute		5 Minute		10Minute	
Voltage (VDC)	TEMP. (°C)		Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)
5.0	0	5320	5319.9999 07	-0.02	5319.956 309	-8.21	5319.955 276	-8.41	5319.965 762	-6.44
	5	5320	5320.0052 91	0.99	5320.026 537	4.99	5320.032 651	6.14	5320.021 032	3.95
	10	5320	5320.0171	3.21	5320.013 853	2.60	5320.041 429	7.79	5320.000 217	0.04
	15	5320	5320.0026 5	0.50	5320.023 234	4.37	5320.003 902	0.73	5320.022 269	4.19
	20	5320	5319.9906 07	-1.77	5319.976 074	-4.50	5319.975 011	-4.70	5319.963 593	-6.84
	25	5320	5320.0018 25	0.34	5320.018 343	3.45	5320.019 404	3.65	5320.049 91	9.38
	30	5320	5320.0476 22	8.95	5320.025 491	4.79	5320.014 378	2.70	5320.020 205	3.80
	35	5320	5319.9531 82	-8.80	5319.986 389	5319.986 389	5319.969 956	-5.65	5319.953 225	-8.79
	40	5320	5320.0095 46	1.79	5320.002 43	5320.002 43	5320.010 949	2.06	5320.039 748	7.47

# ANT 1

## Voltage vs. Frequency Stability (5320 MHz)

Test Conditions		Test Frequency (MHz)	0 Minute		2 Minute		5 Minute		10Minute	
TEMP. (°C)	Voltage (VDC)		Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)
20	4.5	5320	5319.998652	-0.25	5319.962544	-7.04	5319.979284	-3.89	5319.950728	-9.26
	5.0	5320	5320.010571	1.99	5320.047079	8.85	5320.034999	6.58	5320.030926	5.81
	5.5	5320	5320.005022	0.94	5320.04586	8.62	5320.01724	3.24	5320.012577	2.36

## Temperature vs. Frequency Stability (5320 MHz)

Test Conditions		Test Frequency (MHz)	0 Minute		2 Minute		5 Minute		10Minute	
Voltage (VDC)	TEMP. (°C)		Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)	Measurement Frequency (MHz)	Max. Deviation (ppm)
5.0	0	5320	5319.951738	-9.07	5319.956078	-8.26	5319.951285	-9.16	5319.954634	-8.53
	5	5320	5320.004809	0.90	5320.020863	3.92	5320.009347	1.76	5320.025004	4.70
	10	5320	5320.026165	4.92	5320.046207	8.69	5320.038417	7.22	5320.00719	1.35
	15	5320	5320.011573	2.18	5320.017301	3.25	5320.020131	3.78	5320.000167	0.03
	20	5320	5319.951302	-9.15	5319.967571	-6.10	5319.980048	-3.75	5319.976637	-4.39
	25	5320	5320.00351	0.66	5320.033865	6.37	5320.020543	3.86	5320.036618	6.88
	30	5320	5320.038018	7.15	5320.039864	7.49	5320.014963	2.81	5320.002066	0.39
	35	5320	5319.952142	-9.00	5319.969865	-5.66	5319.995796	-0.79	5319.998015	-0.37
	40	5320	5320.009745	1.83	5320.008027	1.51	5320.035957	6.76	5320.030147	5.67

## **ANNEX B TEST SETUP PHOTOS**

Please refer the document “BL-SZ1740210-AR.PDF”.

## **ANNEX C EUT EXTERNAL PHOTOS**

Please refer the document “BL- SZ1740210-AW.PDF”.

## **ANNEX D EUT INTERNAL PHOTOS**

Please refer the document “BL- SZ1740210-AI.PDF”.

--END OF REPORT--